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DEPARTMENT OF THE INTERIOR  
BUREAU OF EDUCATION

BULLETIN, 1916, No. 21

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## VOCATIONAL SECONDARY EDUCATION

PREPARED BY THE  
COMMITTEE ON VOCATIONAL EDUCATION OF  
THE NATIONAL EDUCATION ASSOCIATION

WASHINGTON  
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1916

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## INTRODUCTORY.

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The preliminary report of the committee on vocational education, issued at the Salt Lake meeting of the National Education Association, 1913, gave an account of the appointment of a committee as the result of resolutions passed at the Chicago meeting of the association in 1912. This report contained a statement of what had been accomplished in the few months available before the July meeting. The most important feature of this report was a tentative outline which showed the scope and possibility of the work.

The first question considered by the committee was whether or not a real need existed for its services and whether or not the work planned was a legitimate part of the work of the National Education Association. To establish some definite conclusions regarding this question, an investigation was carried on by the committee by means of a questionnaire to a limited number of the active members of the National Education Association. This questionnaire, briefly setting up the fact of the appointment of the committee, was so arranged as to ascertain rather accurately the opinions of those to whom it was submitted as to the need and desirability of further activity by this committee. The large majority of affirmative answers in reply to this questionnaire seemed to indicate that there was a legitimate field in which positive work could be done.

The investigation was carried still further by a more extended questionnaire on the whole question of vocational education. This was submitted to about 500 members of the National Education Association, and replies were received from nearly one-half of those to whom it had been submitted. The general conclusion drawn from the replies was that there exists a real need for investigation, suggestion, and recommendation in this field, inasmuch as vocational education bears a very positive relation to public welfare. The complete results of this questionnaire were submitted to the National Education Association at its St. Paul meeting, 1914. At the same meeting in St. Paul there was published a proposed terminology prepared by a subcommittee of this committee, consisting of Dr. David Snedden, commissioner of education in Massachusetts, chairman; Mr. C. R. Allen, agent for the State Board of Education in Massachusetts, and the chairman of this committee. This ter-

minology did not attempt to settle the question of definitions; it rather prepared a tentative proposal which might enable persons interested in the introduction of vocational education to clarify their own thinking and their own statements in regard to the work. A revision of this terminology in the light of later criticisms is included in this report.

From time to time meetings of this committee have been held both in connection with the meetings of the National Education Association and in connection with the meetings of the National Society for the Promotion of Industrial Education. At these meetings in most cases a majority of the committee have been present, and it has been possible to consider somewhat carefully plans of work. As in all committee work, it has been necessary, however, for individuals to carry on specific investigations and to make rather definite reports of such investigations.<sup>1</sup> Much of the matter submitted has been referred to persons not members of the committee, and has been revised in view of such suggestions and reactions as have been made by them. It has not been possible to submit each individual document to each individual member of this committee; hence, in the presentation of the following report it should be borne in mind that the specific chapters have been prepared, not by the committee as a whole, but by individual members of the committee or by persons selected by this committee. In planning the work for this volume it was first thought that the whole field should be covered. The extended outline prepared as the first report of the committee, however, was so comprehensive that for practical purposes it seemed utterly impossible to prepare a volume which should contain all the points mentioned. In short, it would appear that there is a growing conviction that the field of vocational education is so replete with possibilities that it is quite necessary that continuous work be carried on both in the field of survey and accomplishment and in the field of suggested forward movement.

In the plans made for the preparation of this volume the idea was presented that it should be prepared for the assistance of those seeking to introduce vocational education into any given community. Through conference it developed that in all probability the superintendents of schools in the several communities throughout the country would be the persons most likely to be interested in the introduction of this type of education. For that reason the objective was to prepare a report which would be of assistance to the average superintendent of schools in a community of ordinary size, were he

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<sup>1</sup> The material for the following chapters was, in the first instance, assembled by the persons here named: Chapters I and II, by Robert J. Fuller; Chapters III and IX, by David Snedden; Chapters IV and V, by Charles Prosser; Chapter VI, by C. H. Winslow; Chapter VII, by Meyer Bloomfield; Chapter VIII, by A. Lincoln Ellene; and the appendix by E. R. Snyder.



to feel the need of introducing such work into his home school system. With this limitation the committee set to work to prepare its report. Among the things felt to be especially necessary were a brief historic setting of the work in vocational education, some knowledge of the kinds of schools that have been established in this country, and where these schools may be found, a knowledge of the terms and definitions which seem to be desirable in the work of vocational education for purposes of clearness, a knowledge of how to investigate the need for the work in any given community, a knowledge of how to carry it on after investigation has been made, some reference to the relation between vocational education and vocational guidance, the proper methods of financing the problem, and a statement of possible problems and difficulties which have not been settled and which require further consideration previous to their settlement.

The committee which was appointed by the president of the National Education Association at the meeting of the department of superintendence in February, 1913, consisted of educators, social workers, labor representatives, and business men. The widely representative character of the committee was planned for in the original resolutions, passed at the Chicago meeting in 1912. As at present constituted the committee is made up of the following persons:

Robert J. Fuller, chairman, superintendent of schools, North Attleboro, Mass.

David Snedden, State commissioner of education, Boston, Mass.

Arthur D. Dean, chief of the division of industrial education, State of New York.

R. W. Himelich, principal Normal Training School, Cleveland, Ohio.

Charles H. Winslow, director of surveys, Indianapolis, Ind.

Frank Duffy, general secretary United Brotherhood of Carpenters and Joiners, Indianapolis, Ind.

W. B. Prescott,<sup>1</sup> formerly commissioner of International Typographical Union on Supplemental Trade Education, Chicago.

A. Lincoln Filene, treasurer and general manager of William Filene's Sons' Co., Boston, Mass.

Walter D. Sayle, president Cleveland Punch & Shear Works, Cleveland, Ohio.

Miss Julia Lathrop, Chief Children's Bureau, Washington, D. C.

Owen P. Lovejoy, secretary National Child Labor Committee, New York.

Charles A. Prosser, president Dunwoody Institute, Minneapolis, Minn.

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<sup>1</sup> Deceased.



# VOCATIONAL SECONDARY EDUCATION.

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## Chapter I.

### HISTORY AND DEVELOPMENT.

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The present use of the term "vocation" in the field of education is somewhat more comprehensive than the generally accepted idea of the word. Its earlier adaptation was more particularly to the "callings" or professions. It is almost within the present decade that its fuller meaning has been interpreted. This newer significance has not yet become sufficiently well and widely known to have the educational doctrines which it now includes generally appreciated either by educators or laymen.

In tracing the development of the doctrine of vocational secondary<sup>1</sup> education, it is recognized that, in the earlier American life, handwork of all types was done in the home. It was here that the operator, obliged to know the whole process, turned out small quantities of manufactured articles. Even the young people who were to enter the professions were, for the most part, taught some of the home occupations. The points of contact were so numerous that differentiation was impossible. Whatever of direct instruction for a vocation was to be given was handed from father to son and from mother to daughter. This was not unlike the earlier practices in the European countries. With the increased population and the increased needs in America, it became necessary to produce in still larger quantities. Very naturally, then, did the people of this country turn to the experience of Europe. It was there that the apprenticeship systems, which existed somewhat among the Greeks and Romans and which were most pronounced during the Middle Ages, had become so highly systematized under the guilds. This influence assisted much in the introduction of the apprenticeship system in the United States.

Like the home shop the apprentice shop was soon forced to abandon its plan because of the increasing demands of society. The

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<sup>1</sup> The word "secondary" in these discussions is used to limit the field. This committee had to do particularly with a consideration of education of less than college grade for persons 14 to 18 years of age. This automatically excludes the professional schools, higher technical schools, etc., as well as elementary schools.

adjustments required a long series of intervening steps until industry, unable to produce goods in sufficient quantities, profiting again by European experience, adopted the plan for division of labor. This plan necessitated the employment of a certain number of persons highly skilled in several processes of a trade and of a much larger number of persons skilled to the degree of specialization in a single process.

This evolution of industry which took place, not alone in America, but in the European countries as well, although less rapidly, resulted in a more limited supply of skilled workers. This latter fact made it doubly difficult in America, for, on the one hand, her own trained workers decreased in numbers and, on the other hand, the importation of such workers was lessened. Furthermore, many of the workers themselves had been forced for one cause or another to enter industry at an early age. They were obliged to specialize, as in the shoe industry, from cutters and last makers to inspectors of the finished product. They finally found themselves unable and unfit either to advance, to secure a more lucrative position, or to increase their output materially. Dissatisfaction, insufficient training, a lessened quality as well as quantity of work produced, and unrest were the result. This situation forced upon the manufacturer the necessity of a source of supply of labor and at the same time forced upon many of the workers the necessity of securing some form of instruction or type of work which would enable them in later years to increase their earning capacity.

So far as can be determined, the American manufacturer at the time of the Centennial Exposition at Philadelphia sensed for the first time the fact that abundant resources alone were insufficient to enable him to compete in the European markets with European goods or in the home market against these same goods. It was here that the American producer had his first opportunity to compare the products and workmanship in his own factory or shop with those of foreign producers. It is an historic fact that schools for art in industry were soon established in several manufacturing centers. Thus was the way opened for manual training, which was started in several of the larger centers before the expiration of another decade.

The lay public who had been educated under the theory of abundant mind training through the faculties were ready to accept the plan. They believed that through it would be derived a practical education, using practical in the sense of earning a livelihood. The more conservative were convinced of its value when it was explained that concentration, coordination of hand and brain, etc., would result. It required many years of experimentation to show

the fallacy of the reasoning that hand training in general, however skillfully organized in successive steps, and however carefully correlated with intellectual attainment, would actually function in any specific occupation unrelated to the work previously performed.

It required the initiative of a man of large affairs, a man of industry, to inaugurate a movement to supply this deficiency. The governor of Massachusetts recommended to the legislature of 1905 an investigation and report upon the needs for industrial education in that State. A commission was appointed. Its report brought about drastic legislation, setting up in the first place an independent State body whose duty was to promote the interests of industrial education in the State. Additional legislation made possible the introduction of industrial education in a given locality with State aid on a graduating scale from 20 per cent to 50 per cent of actual expenditure for maintenance.

Other legislation of a positive nature followed. A commission was appointed the following year in Wisconsin. As a result of its report the Wisconsin Legislature adopted plans for vocational education in 1907 and 1911. New York established laws for vocational education in 1908.

The following diagram has been prepared after careful study of the statutes of the several States. In many cases it has been somewhat difficult to determine whether or not vocational secondary education was permissible in any given State. This is all the more difficult in view of the fact that it is known to members of the committee that in some of the States in which there seem to be no laws providing specifically for vocational education certain types of vocational secondary education are being carried on at local public expense. In preparing this diagram, however, it was assumed that the statutes were a statement of fact and prima facie evidence that vocational secondary education was not legally recognized by the State in question.

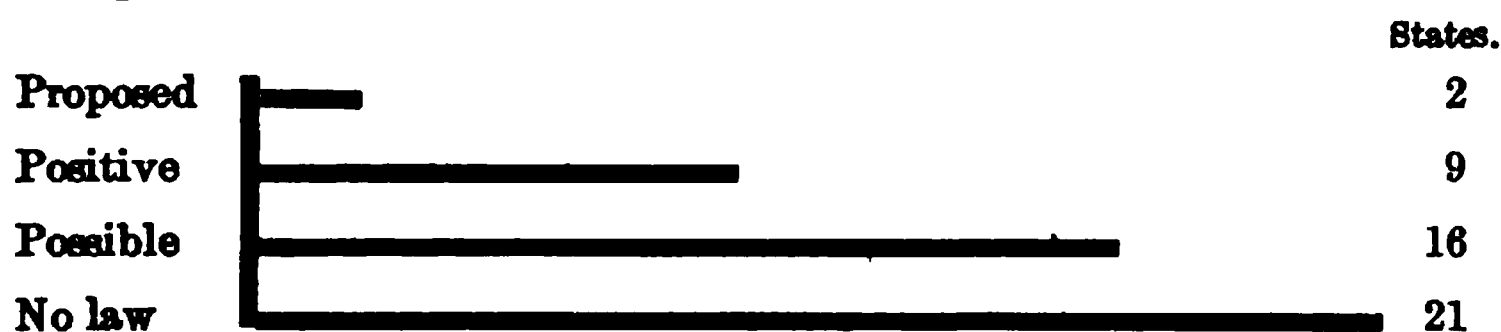


DIAGRAM 1.—Laws for vocational secondary education, distribution by States.

According to the diagram<sup>1</sup> there are 2 States at the present time in which it is proposed to pass laws bearing directly upon vocational

<sup>1</sup> The States included in each of these classifications have been listed and will be furnished upon request to the Bureau of Education or to the committee.

secondary education; there are 9 States which have already passed laws aimed directly toward the introduction of vocational secondary education; there are 16 States in which under the present statutes, so far as can be ascertained from the statutes themselves, it would be possible to introduce some form of vocational secondary education; there are 21 States in which it would appear that there are no statutes having any direct reference to the introduction of vocational secondary education. In fact in these States it may be seriously questioned whether or not vocational secondary education could be introduced without a modification of the statutes.<sup>1</sup>

Since 1908, as shown in the diagram, 7 other States have passed laws which have a direct bearing upon the question of industrial education.<sup>2</sup> As a result, in most of these laws the State subsidizes the local community in carrying forward the work, provided the local authorities conform to certain rather definite requirements. Several other States have asked the National Society for the Promotion of Industrial Education to suggest legislation. As this bulletin goes to press there is a strong probability that Federal aid to vocational education will be granted by Congress. Hence it will be seen that within one decade the United States Government and a considerable number of the States of the Union have taken active measures toward introducing ways and means to provide additional education for those persons over 14 years of age who must of necessity enter some trade or enter industry.

That this demand for a type of education which shall correspond somewhat to life's activities is more than a mere whim is borne out by the extent of legislation already passed concerning manual training and household arts. In nearly every State these subjects are recognized as a legitimate part of public education. In by far the greater majority of these States work in both subjects is carried on in the schools. Despite the fact that in several of the States in which these subjects were introduced there is a feeling that they often fail to function in the lives of the pupils, the number continues to increase. In some of these States, however, this partial failure to reach the desired end has brought about commissions and laws looking toward a type of education which shall train for a specific purpose, that purpose to be easily recognized by the student and his parents.

Even the work in agricultural education, which has been fostered by the United States Government for many years, seemed to lack somewhat the necessary qualities to make it actually efficacious in

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<sup>1</sup> Mr. John A. Lapp, of Indiana, who has made a study of the constitutions of the several States, has found that in some cases at least it will be necessary to amend the constitution of the State before vocational secondary education can be introduced.

<sup>2</sup> See Appendix for digest of these laws.



producing boys who can farm. The courses in this subject in many of the high schools were often purely textbook courses given in the abstract with practically no relation between the classroom work and the boy's job at home. Many times a modification of this textbook course resulted in so-called laboratory courses in agriculture which went little beyond the analysis of a few types of soil and the suggestion as to possible crops which might be propagated thereon. Boys on the farm were very rightly dissatisfied with this type of education, consequently many of them left their homes to gain a higher education which might be secured at some college. Those of them who had sufficient vision to see the possibilities of farm life often went, to be sure, to the agricultural colleges which have done effective work for a considerable number of years; others with less vision felt that the professional pursuits were more advantageous to them from an intellectual and social as well as a financial standpoint. The parents of these boys gradually found that their farms were being deprived of the more intelligent among the youth of their community. Consequently, dissatisfaction with this sort of thing became quite prevalent. Very naturally, then, in certain communities there was a willingness to provide a type of agricultural education, even, which should actually train a boy to do real farm work.

Instruction for the girls in these rural communities was even less satisfactory than that for the boys. They were all taught the common-school branches, with a little algebra, possibly some geometry, and, if the community was large enough, a little Latin and one modern language—subjects no one of which was designated to assist them in making themselves better homemakers or give them in large numbers a broader outlook upon the possibilities of home life, industrial life, or agricultural life in general.

In those communities where domestic-science courses were offered, the training was general and had no particular bearing upon the lives of the girls in their own homes. In many communities the appropriation was too meager to make this work actually meet conditions of the home. It is only within a very few years that definite projects have been set up for girls in rural communities which are interesting and which involve their ordinary daily activities. At the present time, however, the improved opportunities in the rural communities are having a wide influence upon this work in the country at large.

It would appear, then, from the foregoing facts and conditions that vocational education has not been a mere passing fancy or a project of an individual mind; it has had a definite and rather positive growth until, whether educators or laymen wish it or not, certain definite types of vocational education will be demanded by the fathers and mothers of the boys and girls in the

schools for the direct purpose of fitting these boys and girls to take their right place in life. As has been previously stated, already several States have undertaken the solution of this problem through legislation. It may be possible that such legislation is only tentative; it must of necessity be subject to constant revision and constant amendment. Nevertheless, the fact remains that these States at least recognize the need for this particular type of education in order to provide an equal opportunity for all.

## **Chapter II.**

### **TYPES OF VOCATIONAL SECONDARY SCHOOLS.**

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A directory of secondary vocational schools now in operation in the several States is printed on pages 22-32 of this bulletin. It was compiled after a careful and detailed analysis of the several types of vocational schools. This analysis included also the industrial arts, commercial arts, practical arts, and technical schools, as well as the vocational schools. The following is the analysis as sent to each individual school, including the detailed description of each type of school which accompanies it.

#### **NATIONAL EDUCATION ASSOCIATION.**

##### **COMMITTEE UPON VOCATIONAL EDUCATION AND VOCATIONAL GUIDANCE.**

**R. J. Fuller, Chairman, North Attleborough, Mass.**

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You are asked to fill in the name of your school as indicated. In order that we may know how to classify your school in our list, you are also asked to check in the following list the type which your particular school comes nearest to fitting.<sup>1</sup> Kindly return this sheet to the committee at your earliest convenience.

#### **ANALYSIS OF TYPES OF VOCATIONAL SCHOOLS IN THE UNITED STATES.**

##### **A. Agricultural Schools.**

###### **I. Vocational agricultural day school.**

(a) Part-time agricultural school.

###### **II. Practical arts agricultural school.**

###### **III. Farm extension school.**

##### **B. Commercial Schools.**

###### **I. Vocational commercial day school.**

(a) Part-time commercial school.

###### **II. Commercial arts school.**

###### **III. Evening commercial school.**

(a) Vocational commercial evening school.

(b) Commercial arts evening school.

##### **C. Industrial Schools.**

###### **I. Vocational industrial day school.**

(a) Vocational part-time industrial school.

###### **II. Evening industrial school.**

(a) Vocational extension industrial school.

(b) Vocational preparatory industrial school.

###### **III. Industrial arts school.**

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<sup>1</sup> See booklet for complete statement of this analysis.

**C. Industrial Schools—Continued.****IV. Continuation industrial school.**

(a) Extension industrial continuation school.

(b) Preparatory industrial continuation school.

**D. Homemaking Schools.****I. Vocational homemaking day school.**

(a) Part-time homemaking school.

**II. Evening homemaking school.**

(a) Vocational extension homemaking school.

(b) Vocational preparatory homemaking school.

**III. Household arts school.****E. Technical High School.**

Town or City-----State-----

Date-----Name of School-----

Where located-----Street-----

Answered by-----

**ANALYSIS OF TYPES OF VOCATIONAL SCHOOLS IN THE UNITED STATES.**

This analysis is based, as nearly as possible, both upon actual practice and general terms which are being used in the various parts of the country to distinguish between the several types of education involved.

You are asked to classify your particular school in accordance with this plan. In case none of the descriptions seem to fit your individual conditions, kindly make your own classification, telling us where in your opinion it should be placed in this scheme.

**A. AGRICULTURAL SCHOOLS.**

Agricultural schools are those schools in which the teaching of some form of agriculture is made the prominent feature:

**I. Vocational Agricultural Day School.** Vocational agricultural day school is one in which the instruction is given in the daytime and under the real conditions of farm life. That is to say, the student must actually perform work upon land, or with stock or fruit, which work is productive and will teach him the actual operations involved.

These schools may be high schools devoting their entire time to agricultural education in this definite way, or to a study about the operations involved in the school time. This type of education may also be conducted as a department in a high school having other departments, such as preparatory courses, etc.

(a) **Part-Time Agricultural School.** Part-time agricultural education will be that form of education in which the pupil attends school one-half of the time, or thereabouts, and actually performs work upon farm projects the remaining portion of his time. His experience on the farm must be real productive experience.

**II. Practical Arts Agricultural School.** In these schools the work in agriculture will be of much more general nature than will that in the preceding schools. Under this head should be classified schools which offer work in home gardens or school gardens, which offer courses from agriculture textbooks without actual practical farm experience, and those which offer courses for the development of appreciation and interest in farming, or agriculture in general.

**III. Farm-Extension School.** It is known that farm-extension courses are provided through revenue from the United States Government in practically all

of the States in the country. Such courses are offered for the benefit of persons now engaged in farm work and are not confined to age limitations. This committee desires to know if such work is carried on in the communities receiving this questionnaire.<sup>1</sup>

#### B. COMMERCIAL SCHOOLS.

Commercial schools are those schools in which the teaching of bookkeeping, stenography and typewriting, salesmanship, buying, filing, and general office practice are the controlling courses taught in the school.

**I. Vocational Commercial Day School.** In this type of school there will be offered either a two or four year course in such subjects as are indicated in the preceding description. So far as may be possible the real conditions of trade will be duplicated. The entire instruction will be carried on in the school. These schools may be conducted in some cases as a part of the four-year commercial course so-called in some high schools. When so conducted, a positive distinction should be made between the work which is of a general character and is often offered during the first two years of the course, and that work which is of a more specific character and is offered for the purpose of training the students to become workers in the commercial field.

These schools may be known as commercial high schools devoting their entire time to commercial education or, as indicated above, they may form a part of the regularly conducted high school as a single department in that school.

**(a) Part-Time Commercial School.** Part-time commercial education is no doubt conducted in some communities. It is that form of education in which the pupil attends school a portion of the time and actually performs work in an office for the remaining portion of his time. The work carried on in the schools should be closely related to the work which is being carried on in the office. The office experiences must be real experiences and sufficiently varied to give the pupil an idea of general office practice.

**II. Commercial-Arts School.** In these schools the work in the commercial branches will be of a more general nature than that in the preceding schools. In addition to the work in the commercial subjects, there will in all probability be offered work in the general subjects of the school curriculum. In some instances, instead of real problems which the student is likely to meet in life, he will be studying general textbooks about commercial work and the way in which that work is carried on.

These courses or schools may be organized for the purpose of enabling the pupil to test out his own interest or desire for work of this nature. The courses may also be offered for certain pupils who desire to add to their general education the specific accomplishment of ability to use stenography or the typewriter.

**III. Evening Commercial Schools.** These schools may also be of the two types already described.

**(a) Vocational Evening Schools.** Those known as the vocational evening schools in which the entire emphasis is placed upon the acquisition of some specific form of commercial work, as the use of typewriting and stenography.

**(b) Commercial-Arts Evening School.** The commercial-arts course in the evening school in which a general acquaintance with commercial subjects is all that is expected to be accomplished by the course.

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<sup>1</sup> It is not known to this committee that evening courses in agriculture exist in any part of the country. If they do exist, they should be classified either as practical-arts or farm-extension courses. Kindly classify any which you may have in this particular way.

## C. INDUSTRIAL SCHOOLS.

Industrial schools are those schools in which the teaching of some trade, or parts of trades, constitutes the work of the schools. These schools may include such work as carpentry, mining, and training of teamsters, printers, barbers, etc.

**I. Vocational Industrial Day School.** The vocational industrial day school is one in which the instruction is given in the daytime. So far as possible the actual conditions of the shop are duplicated. The product made is marketable. The student performs work which is productive at the same time that he is learning the operations involved.

These schools may be of the nature of high schools which devote their entire time to instruction in trades. They may give both what might be called elementary instruction in the vocation, admitting pupils at 14 years of age, or they may give advanced instruction, admitting pupils at 16 years of age. The control of the instruction in these schools, whether the work is done in school or shop, is directly in the hands of the school.

(a) Part-Time Vocational Industrial Schools will be those schools in which a considerable portion of the time, nearly one-half, is given to the instruction in the school itself, and the other one-half to the earning of wages in a shop.

In this type of school usually there is a definite effort to make the school responsible to a considerable extent for the shopwork, although the responsibility may be equally divided. For this classification, however, these facts need not be considered.

**II. Evening Industrial School.** The evening industrial school will be a school in which the instruction in the trade or occupation is carried on in the evening. The work in the school may consist either of the short unit course or of the progressive course of instruction. In these schools there will be usually admitted only those persons who are actually engaged in the industry for which the instruction is given.

(a) Vocational Extension Industrial School. In case the instruction is in a field corresponding to that in which the person is engaged, the school will be called an Extension Industrial School.

(b) In case the work in the school is different from that in which the student is employed, and is for the purpose of giving him a new trade, the school may be called a Preparatory Industrial School.

**III. Industrial Arts School.** In these schools work closely allied to the industries—that is to say the trades and occupations—will be given. There will not be any direct attempt to teach a vocation through the instruction given. The thought that will underlie the work is to provide the pupil with experience, which experience will enable him to know something of certain occupations, and which may result in enabling him to choose wisely for his own vocation. They do not offer specialized courses of work. They are sometimes known as Pre-Vocational Schools. Another object which may underlie these schools will be the development of appreciation and interest in certain specified industries.

**IV. Continuation Industrial School.** Continuation industrial schools are those schools made up, for the most part, of students who spend the greater portion of their time in the industry, but who are obliged up to the age of 18 years to attend school a few hours per week (in no case less than four hours). Like the evening industrial school, they may be separated into two types:

(a) Extension Industrial Continuation Schools, in which the instruction in the school is about the work which the student is doing in the daytime, or is closely related to that work.



(b) Preparatory Industrial Continuation Schools, in which the pupil takes subjects entirely foreign to those related to his everyday experiences and learns a new trade or occupation.

#### D. HOMEMAKING SCHOOLS.

Homemaking schools are those schools in which the activities of the home are actually taught. They may include cooking, sewing, millinery, and the like.

I. Vocational Homemaking Day School. In these schools the greater portion of the work will bear directly upon the occupation of the home. The school may be conducted as a separate girls' school, or it may be conducted as a department in a high school.

(a) Part-Time Homemaking School. Part-time instruction in these schools will consist of a study of the subject of homemaking in the school and the actual practice of homemaking in the home.<sup>1</sup>

II. Vocational Evening Homemaking School. As in the case of other evening schools, evening homemaking schools will be carried on for the purpose of giving definite instruction in homemaking. The work in these schools may consist of short-unit courses or of progressive courses of instruction. Into these schools will be admitted those persons, usually women, who wish to become proficient in homemaking.

(a) In case the students in the schools are employed during their working hours in occupations other than homemaking, such as clerks or stenographers, the school may be called a Preparatory Homemaking School.

III. Household Arts School. The work in these schools will be given for the purpose of enabling the students to become acquainted with the various activities found in the home. The aim of the course will tend to be somewhat general rather than specific. The thought that will underlie the work will be to furnish the student with an actual experience. This experience will serve as a basis for choice of vocation and may be of considerable value in the actual work of homemaking.

Usually these schools will not be organized apart from the ordinary high school, but will be single courses in these schools. They may be considered as prevocational in the sense that the work and instruction will be more inclined to be general than specific. The courses offered in the various schools will be designated as courses in domestic economy, domestic science, household arts, and the like.

#### E. TECHNICAL HIGH SCHOOLS.

Technical High School. These schools are the schools which were organized largely as a result of the movement for manual training in the schools. They offer general courses in machine working, woodworking, and other forms of manual work. The academic work is also somewhat closely related to the work carried on in the shops. In most cases and more particularly in the first two years of these schools, the academic work is general rather than specific. There would probably be very little direct effort to teach specific occupations. These schools sometimes may be said to prepare pupils for the higher technical schools and for courses in engineering in these higher technical schools.

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<sup>1</sup> These schools may also serve the purpose of training bakers and that class of workers whose occupations may be said to relate closely to that of homemaking.

## LOCATION OF VOCATIONAL SCHOOLS.

The following tables were made directly from the replies to the questionnaire which was sent to the State departments and to the individual schools. In other words, as far as possible, each school listed in the accompanying tables has been placed there by the authority of some person directly in charge of the school. This has prevented the committee from arbitrarily setting up and listing, or attempting to determine, the exact type to which a school belonged.

The data are as accurate as could be made from the material available. There is no thought of making the tables inclusive or absolutely correct. Any omissions that may have occurred have resulted from: First, failure to reply to the questionnaire; second, some schools already in operation may not have been known to the committee; and third, in the progress of the movement new schools are continually being established. Obviously it has been impossible to include in this list all of the commercial arts schools, household arts schools, industrial arts schools, technical high schools, as well as departments of these various types which are carried on quite generally in the United States. These schools have been purposely omitted, because this book is devoted mainly to the interests of vocational education, and it is generally recognized that schools of this type can not be classed as vocational schools.

It should be mentioned also that some omissions are due to the fact that State departments of education were unaware that certain types of vocational schools were in operation in the communities within their own States; nor is this a result of negligence, as many such schools are maintained wholly by local taxation and are carried on under local management. In some cases also States reporting, because of an insufficient amount of funds at their disposal, have been unable to make accurate investigations or to prepare sufficient data to provide statistics for specific types of education. For these reasons it is almost sure to follow that a vocational school true to some of the types indicated in this analysis may have been carried on for a considerable period without the full recognition of those who have been attempting to determine just where vocational education is at its greatest development. In other instances schools which have been doing successful work as vocational schools, but which are conducted under a separate foundation or as semiprivate institutions, have not been considered as within the province of the work of this committee. It is clear, therefore, that more of the several types of schools exist than are here recorded, and the officers of such schools should communicate with this committee, providing the necessary data for classification if they wish consideration in

future lists. In case it seems unwise for the committee to continue this form of investigation and report, the data will be turned over to the United States Bureau of Education or some other organization prepared to carry on this investigation permanently.

In the preparation of these lists no effort has been made to give the exact location of the school beyond the town or city and State in which it is situated. Any other method would add materially to the length of the tables and to the cumbersomeness of the report.



[illegible]

### VOCATIONAL SECONDARY EDUCATION.

*Location of vocational schools—Continued.*

[illegible]



*Location of vocational schools—Continued.*

Cities and villages.	Agricultural.				Commercial.				Industrial.				Homemaking.				Technical high school.				
	Vocational agricultural.		Practical arts agricultural.	Farm extension.	Vocational commercial.		Commercial arts.	Evening commercial.		Vocational industrial.		Evening industrial.		Industrial arts.	Continuation industrial.			Vocational homemaking.		Evening homemaking.	Household arts.
	Day.	Part time.			Day.	Part time.		Day.	Part time.	Extension.	Preparatory.	Day.	Part time.		Extension.	Preparatory.		Day.	Part time.		
NEW JERSEY—continued.																					
Gloucester County:																					
Franklin Township.....																					
Glazebro.....																					
Pitman.....																					
Swedesboro.....																					
Woodbury.....																					
Hudson County:																					
Bayonne.....																					
Hoboken.....																					
Jersey City.....																					
Kearny.....																					
Town of Union.....																					
Weehawken.....																					
West Hoboken.....																					
West New York.....																					
Mercer County:																					
Ewing Township.....																					
Hamilton.....																					
Princeton.....																					
Trenton.....																					
Middlesex County:																					
Cranbury.....																					
Dunellen.....																					
Highland Park.....																					
Jamesburg.....																					
Metuchen.....																					
Milltown.....																					
New Brunswick.....																					
Perth Amboy.....																					
Roosevelt Borough.....																					
South Amboy.....																					



## LOCATION OF VOCATIONAL SCHOOLS.

[illegible]

*Location of vocational schools—Continued.*

Cities and villages.	Agricultural.				Commercial.				Industrial.				Homemaking.				Technical high school.				
	Vocational agricultural.		Practical arts agricultural.	Farm extension.	Vocational commercial.		Commercial arts.	Evening commercial.		Vocational industrial.		Evening industrial.		Industrial arts.	Continuation industrial.			Vocational homemaking.		Evening homemaking.	Household arts.
	Day.	Part time.			Day.	Part time.		Day.	Part time.	Day.	Part time.	Extension.	Preparatory.		Day.	Part time.		Extension.	Preparatory.		
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## LOCATION OF VOCATIONAL SCHOOLS.

[illegible]

## VOCATIONAL SECONDARY EDUCATION.

[illegible]

### LOCATION OF VOCATIONAL SCHOOLS.

[illegible]









## SCHOOLS CLASSIFIED.

In general there may be said to be developing in the several States definite types of schools which hitherto have not been recognized in this country in the previous growth of education. For ordinary purposes these schools may be classified into three distinct types:

**1. Day Vocational Schools**, in which the pupils attend school the greater part of the working day for at least five days each week. In these schools are taught both the actual operations and the theory underlying these operations. These schools may again be classified according to (*a*) the place where instruction is given, and (*b*) the type of responsibility. If all of the work is carried on under one roof, the school may be a unified, full-responsibility, or part-responsibility school. The specific designation will depend upon the amount of responsibility assumed or conceded to the school officials. These schools again may be dual schools, that is to say, part of the work may be done in the school building and a part carried on in the shop, with a possible change in responsibility.

**2. Evening Vocational Schools**, in which, as the name implies, the instruction in the school is given in the evening. It may be given in the same operation or in some operation connected with the occupation in which the pupil is employed in the daytime, but in which he wishes further instruction to increase his efficiency. On the other hand, it may be in some occupation which the student wishes to enter, which differs materially from his regular daily work.

As indicated in the previously given analysis, schools for the first type of students are trade extension schools and for the latter, trade preparatory schools.

**3. Continuation Schools**, which, as generally carried on in this country, are schools in which the pupil receives some form of day school instruction at the same time that he is employed in the shop. Like the evening schools, the work in these schools may be preparatory or extension. In addition, it is possible in these schools to offer work for general improvement or culture.

The school at Beverly, Mass., furnishes one of the best examples of the day vocational, full-responsibility school. In this school the pupils receive theoretic or related instruction under the direction of their foreman during one week; and during the following week, under the direction of the same foreman, they receive definite instruction in the shops of the United Shoe Machinery Co. The instructor or foreman employed by the city is at all times responsible directly to the school authorities and has entire charge of the work of the group of pupils with whom he is associated.

The school at Quincy, Mass., carried on in connection with the Fore River Ship Building Co., is illustrative of the dual-responsi-

bility type of school, for the related instruction is given under the direction of the school authorities, while the technical or mechanical instruction is given under the management of the Fore River Ship Building Co.

Extension schools exist in many parts of the country, more particularly in the large cities. The evening schools in Boston devoted to homemaking and the metal trades and to the training of vocational teachers are excellent examples of these schools. While in some of these schools in some parts of the country is offered more work of a preparatory nature, in the sense used previously, it is yet to be demonstrated that any evening school can prepare students effectively for work in an unfamiliar occupation.

Probably the most notable example of the continuation school in a broad sense in this country is the system now carried on in Wisconsin. This type of school, however, has been in operation in Cincinnati for several years. More recently has it been inaugurated in Boston, where the director has charge of the vocational work in the city in general. Thus far the work here seems to be of an unusually high order. In all schools of this type there is an attempt to continue the education of the youth considerably beyond the age of 14 years. Some of these schools attempt to give trade extension and others trade preparatory work, but in general it may be said that continuation schools usually better illustrate improvement and general education schools than vocational schools. As in the case of the evening school, it does not seem to be clearly established that trades and occupations can be taught with a few hours' attendance upon school each week.

The best illustration of the part-time school is the one at Cincinnati in the university under Dr. Schneider. In this school the boys work one-half time in a manufacturing plant and attend school one-half time. This school, however, is of college grade, higher than secondary. The school at Fitchburg, Mass., is an example of the secondary school of this same type. Various experiments have been carried on in part-time education in other towns and cities, with varying degrees of success.

In any attempt to describe or classify vocational schools briefly, it is recognized that opinions as to the classification may differ. The attempt in the previous analysis has been only to set up a few of the larger types which represent rather definite procedure in the conduct of the schools. The classification here made is, so far as was possible, a direct analysis from the information available. It is to be expected that the work and method of organization in any of the schools mentioned may undergo continuous change. Hence, schools which have formerly been considered general schools may gradually grow into some definite type of vocational school.

## Chapter III.

### DEFINITIONS, ANALYSIS, AND ILLUSTRATIVE EXAMPLES.

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#### PRELIMINARY.

Education is still largely in the "prescientific" stages of its development. As a consequence, it derives its terms and symbols almost exclusively from the everyday vernacular of the people. But the terminology thus developed necessarily lacks in definiteness and consistency. No two speakers on a given subject will be found to use terms derived from the popular language in exactly the same sense. Great confusion and waste of effort thus result.

The time has not yet arrived for educators to do what has been done in the fields of medicine, engineering, scientific agriculture, and other fields of applied science—that is, develop a technical terminology consisting of new terms and symbols coined for the purpose, and giving exact and unvarying meanings. In education it will be necessary for some time to continue to use, in the main, the old familiar words and phrases, with their numerous variations of meaning and their almost unlimited special connotations.

But educators can do this: They can agree to use certain words and phrases for the time being in certain definite ways, and with certain consistent meanings, and when making departures from this usage clearly indicate the grounds and extent of their divergence from the meaning agreed upon.

To this end there is required a series of definitions of the terms most frequently employed in education, and furthermore, such an extended analysis, with abundance of concrete illustration, as will show to anyone acquainted with educational thought actually what is meant by the nomenclature thus established. Most persons find it difficult to translate abstract terms and phrases into concrete and definite meanings. It is obvious also that during any period of marked activity in the development of an educational movement, new and varied situations arise which interest laymen as well as schoolmen. The very rapidity of that growth often anticipates the development of a clearly defined theory of education or social economy. To assist somewhat in avoiding the confusion in thinking and language resulting from the above conditions, this chapter

has been prepared. The usual plan has been to follow and precede definitions with an extended analysis of the ideas involved, and to append numerous concrete illustrations of the types of vocational education referred to.

As noted in a preceding chapter the earlier developments of this type of education began in Massachusetts. Consequently, there has grown up in that State a considerable background of theory, practice, and experience which has necessitated the use of terms with rather clearly defined meanings. For this reason some of the suggestions as to the use of terms and meanings are based upon the usage there, more particularly by the board of education, which was required by law to supervise various forms of vocational education. This made it necessary to evolve, and use consistently, a somewhat definite terminology. Other terms and definitions have, however, been utilized in this terminology. The whole is to be regarded as an effort to overcome somewhat the tendency in one field of education to follow a loose, general, and sometimes almost meaningless terminology.

#### I. GENERAL DEFINITIONS AND DISTINCTIONS.

1 (Definition). **Vocational education** is any form of education, whether given in a school or elsewhere, the purpose of which is to fit an individual to pursue effectively a recognized profitable employment, whether pursued for wages or otherwise.

Webster's Dictionary defines vocation as follows: Destined or appropriate employment, calling, occupation, trade, business, profession.

Among the specific occupations for which vocational education may be given are the following: Physician, electrical engineer, teacher, bookkeeper, salesman, stenographer, machinist, plumber, bricklayer, printer, dressmaker, cook, weaver, gardener, florist, farmer, poultryman, homemaker, mother's assistant, domestic servant, sailor, fisherman. This list is capable of being added to indefinitely. There are, at least, some hundreds of different occupations for each of which specific vocational training is practicable.

(a) By "purpose" is here meant the purpose or aim which is held in view, and in conformity with which all steps are taken in arranging programs of instruction, selecting practical work, devising tests, etc. The aim is said to "control" the selection of the means and methods of instruction used in realizing the aim.

For example, if it is the purpose of given courses of training respectively to produce a machinist, a physician, and a printer, the requirements of these respective occupations will control in the choice of the materials and methods of instruction. In the vocational

course, as such, matter will not be included which does not have a clearly perceived relationship to efficiency in the vocation.

(*b*) The purposes which should control in a given program of vocational education obviously can only be found by studying the vocation itself for which training is to be given. On the basis of the results of this study, means and methods of training and instruction must be devised, and a predetermined degree of efficiency in the proposed calling constitutes the aim or objective, in the light of the demand of which the means and methods of such training and instruction are selected.

For example, the means and methods employed in the training of a printer may differ absolutely from those employed in the training of a house carpenter. What means (including thereunder subjects of study, courses of instruction, textbooks, material equipment, etc.) and methods (methods of teaching, class organization, adjustment of practical to technical work, etc.) shall be employed in each case will depend wholly upon the requirements of the occupation itself.

(*c*) The extent to which training can be given for a recognized vocation will, in the last analysis, also depend upon the inherited and acquired powers of the individual who is to be trained, and on the economic conditions determining the age at which the person enters upon the pursuit of a given occupation.

In common practice, only persons of exceptional native endowment and opportunities for prolonged study are admitted to classes preparing for the practice of medicine, engineering, teaching, etc. In every trade school, many applicants are refused, or are early eliminated, because of physical or other unfitness for the successful pursuit of the trade. A person obliged to become self-supporting at 14 or 15 years of age can not reasonably be expected to profit from the introductory stages of prolonged courses of instruction designed to require the time of a more favored student up to the age of 18 or 20.

(*d*) In practice, any program of vocational education should be based upon the requirements of a definitely analyzed calling, and the means and methods should be modified, so far as practicable, with a view to their adjustment to the needs and possibilities of a group of individuals having a common purpose, and possessed of somewhat similar qualifications.

(*e*) Vocational education of any specific kind "functions" when, as a result of a definite amount of training, an ascertainable degree of proficiency in the exercise of a vocation is shown in the individuals trained.

For example, if it can be shown that a given course of instruction (embracing practical training and theoretical instruction) in den-

tistry produces in most of those taking such course a definite ability successfully to practice dentistry, then such training is said to "function" effectively. Again, if in the case of a young man, already a successful worker in the machinshop calling, a definite series of short units of training in some form of mathematics or drawing adds obviously to his industrial ability, then such training is said to "function." If, on the other hand, 40 per cent or 50 per cent of the persons completing, for example, a course of study alleged to fit for farming are able to show no marked improvement in practice as a result of such training, or if an equal number, after having had such training, enter other callings, then the "functioning" of such instruction may be regarded as doubtful or imperfect.

**2. Major divisions of education of equal rank with vocational education.**—Other major divisions of education besides vocational education are: Physical education, social education, and cultural education. Physical education may be held to embrace all forms of training and instruction the controlling purposes of which are to conserve and promote useful development of the body and its capacity for effective "functioning." Social education may include all forms of training and instruction designed to make for better group living and activities. Included under this head are moral education, civic education, ethical training, and much of religious instruction. Cultural education may here include all forms of training and instruction designed to develop valuable cultural interests of an intellectual and æsthetic nature, including permanent interests in such fields as art, literature, science, and history. Cultural education also includes training in the use of intellectual "tools," or "instrumentalities" of general (not particular, i. e., vocational) application, such as the efficient use of the vernacular language in reading, writing, and speaking, a second language, etc. Social education and cultural education are often described jointly as "general" and in later stages as "liberal" education.

**3. Distinction between general and vocational education.**—General education aims to develop general intelligence, powers of appreciation in all common fields of utilization, and powers of execution with such intellectual instruments as language, mathematics, scientific method, etc., without reference to recognized or specific callings; while vocational education has its aims, and, therefore, its means and methods determined in any case by the requirements of a specific calling.

For example, experience proves that it is desirable for all persons to be trained to read and to write, without reference to the specific callings which they may ultimately pursue. Equally, all people should be trained to appreciate and to choose wisely for their own use valuable products from such fields of human effort as literature,



art, economic goods, and the specialized service of others. All persons should also be trained in the habitual actions, appreciations, knowledge, insight, and ideals, which constitute approved moral conduct and good citizenship. The forms of education designed to produce these ends may be further subdivided and described by such terms as "elementary education," "academic education," "general secondary education," etc.

**4. Distinction between vocational and practical arts education.**—Vocational education is also to be distinguished from various forms of so-called "practical education," which may resemble, in their processes, vocational education, but which do not result in definite forms of vocational efficiency.

The various forms of nonvocational education here comprised under the term "practical arts," include manual training, sloyd, manual arts, arts and crafts when pursued as part of general education, household arts, simple gardening and agricultural education, many phases of commercial education, etc.

(a) The various forms of practical arts education as now given in schools are not properly vocational, although sometimes mistaken for vocational education, because they do not result, except by chance, in recognized forms of vocational efficiency, nor are they assumed to be given to persons who have defined vocational aims. The means and methods they adopt are not selected with a view to the preparation of the pupil for recognized callings.

(b) Various forms of practical arts education have an important and valuable place in general or liberal education, as a means of enlarging general intelligence, developing sound appreciation of economic products, and in part in laying the foundations for vocational choice.

(c) Practical arts education is sometimes termed "prevocational education," because of the belief that a suitable program of practical arts training will make important contributions toward the individual's ability to choose a vocation wisely. Its value to this end depends largely upon the degree to which the individual has already developed vocational interest and a desire to choose a suitable vocation.

**5. Distinction between direct (or systematic) vocational education and indirect vocational education.**—A large amount of vocational education, in the broad sense of that term, especially for the unskilled or semiskilled occupations, is an indirect result or a by-product of association and cooperation with older people engaged in productive occupations. One is said to "pick up" skill, vocational intelligence, or vocational ideals in this way. Among primitive peoples usually, and even in civilized society in many fields, such as homemaking and farming, indirect

vocational education is common. There is a tendency in society to substitute systematic or direct vocational education for indirect (and therefore, presumably, uneconomic and ineffective) procedures.

**6. Distinction between systematic vocational education through schools and through other agencies.**—Vocational education may be carried on through a school (an agency specialized for this purpose) or through other agencies, primarily specialized for other and, usually, profit-making purposes, and only secondarily adapted to systematic vocational education. Apprenticeship in the trades, and, originally, in the professions, is an example of such nonschool systematic vocational education. Farmers and homemakers sometimes quite systematically train their children to follow their own vocations. Commercial establishments often provide for the definite instruction and advancement of young assistants. There is a manifest tendency on the part of society to transfer to school agencies vocational education, because of the greater degree of concentration and effectiveness thus made possible, and because, under modern conditions, economic agencies are unable to give due attention to systematic vocational education as a secondary phase of their responsibilities.

**7. Distinction between private and public vocational schools.**—Vocational schools may be supported by private agencies either through endowments or through fees received from students. Such schools, when controlled by private agencies, are called "private vocational schools." They may further be distinguished according as they are (*a*) endowed with more or less philanthropic intent, and having no object of profit in view; or (*b*) as being on a commercial basis in having profit making as a chief end. Public vocational schools are those supported, at least in part, under public expense, and are usually under the control of publicly constituted authorities. Professional schools in State universities, trade and commercial schools conducted by municipalities, agricultural and homemaking schools conducted by States or subdivisions thereof, etc., are examples of public vocational schools.

As a rule, professional schools in the United States have not been organized for profit. Many commercial, and some trade schools, are conducted for profit. Philanthropy has also endowed many trade schools for dependent or defective children.

## II. MAJOR DIVISIONS OF VOCATIONAL EDUCATION.

**1. Major divisions of occupations.**—The economic or productive occupations (as distinguished from leisure and cultural occupations) which men and women follow (chiefly for self-support) may, for convenience, be grouped in six large classes, namely, the



professions, the agricultural pursuits, the commercial pursuits, trades and industries, homemaking pursuits, and nautical pursuits.

The major divisions of wage-earning occupations recognized by the United States census are: The professions, agriculture, domestic occupations, trade and transportation, and trades and manufacturing pursuits. The United States census does not recognize the division of nautical pursuits, nor does it include homemaking pursuits (because nonwage-earning) under the head of domestic occupations.

The United States census includes under trade and transportation (for commercial pursuits) railway workers, sailors, etc. Under the domestic occupations are included barbers, janitors, soldiers, watchmen, cooks, servants, hotel keepers, etc.

**2. Major divisions of vocational education.**—The suitable major divisions of vocational education, corresponding, in the main, to those of the economic occupations, are these: Professional education, vocational commercial education, vocational agricultural education, vocational industrial education, vocational homemaking education, and nautical education.

It is advantageous to subdivide vocational education into the six divisions given above, because each division has its own distinctive pedagogical characteristics, based largely upon the phases of the occupation for which training is being given. It is clear, however, that in many cases a hard and fast classification will not be practicable. For example, cooking as a wage-earning occupation will be classed under the industries, whereas cooking as a part of home making will come properly under home-making education.

For other purposes, vocations may be grouped into (a) those requiring a relatively large amount of technical or abstract knowledge, such as the practice of medicine, law, teaching, engineering, and bookkeeping; and (b) those requiring or appearing to require a relatively large proportion of manual or other form of bodily skill, such as dentistry, machine-shop practice, dressmaking, and farming. In popular language, the distinction is made between "brain workers" and "hand workers." Also, it is important to make distinctions based on the suitable age at which workers can take up vocations (the so-called "age of efficient entrance into industry"). A person is rarely expected to take up responsible work in the practice of medicine before the age of 22 or 23; in engineering before the age of 20; and in teaching at least before the age of 18. Many trades can not be followed effectively until the worker has reached the age of 18, on account of the bodily strength required, or responsibility with machinery. Again, industrial vocations are frequently divided into the skilled and unskilled, to many of the former the word "trade" being applied.

(a) Because many forms of apparently practical education (i. e., training for productive pursuits), which are not in reality vocational (as defined above), are already designated by such terms as "commercial," "agricultural," "industrial," etc., it seems necessary that the term "vocational" should be included in each designation of a form of vocational education except the professional and nautical, as "vocational commercial education," "vocational agricultural education," etc.

(b) There is a sense in which the term "industrial" is also applied to many occupations lying outside of the trades and manufacturing pursuits, as when we speak of "industrial history," "industrial disturbances," "industrial and political development," etc. This usage has also been extended to the field of education, so that there is a popular sense in which "industrial education" means nearly every form of vocational education, except, perhaps, homemaking and professional education. This loose and indefinite usage should be discouraged.

3 (Definition). **Professional education** includes those forms of vocational education the direct purpose of each of which is to prepare individuals for the successful pursuit of a recognized profession.

Among the professions recognized by the United States census are: Law, medicine, engineering, journalism, theology, architecture, acting, dentistry, teaching, music, literature.

Nursing, leadership in agriculture, leadership in war, and leadership in institutional management should probably also be included among the professions.

(a) Vocational education for the professions, like vocational education for the trades, was formerly carried on through apprenticeship, but now schools of medicine, law, theology, and military leadership have entirely replaced apprenticeship as a means of systematic vocational education for these professions. Schools for these professions originated in some cases several centuries ago. Vocational schools of engineering and teaching were first founded early in the nineteenth century. Almost every profession (except nursing, acting, and, in a measure, journalism) now has numerous well-organized schools of vocational training. Conscious apprenticeship methods seem to survive only in training for nursing and, in a measure, acting and journalism.

(b) In some professions, such as medicine, law, and teaching, the State safeguards standards by means of certification or licensing. In these cases the requirements of such certification greatly affect standards of vocational school work. The practice of State certification is carried much further in European countries than in America.

(c) Certain studies found in schools or colleges, preliminary to the professional course, are now recognized as preparatory or "prevocational" to professional study. Examples of these are biology as prevocational to medicine; history and economics as prevocational to law; trigonometry and physics as prevocational to engineering; etc. It was formerly asserted that studies such as Latin and modern languages were prevocational to almost all of the professions. The validity of this contention is now disputed.

4 (Definition). **Vocational commercial education** includes those forms of vocational education the direct purpose of each of which is to fit for some recognized commercial calling.

Among the commercial callings enumerated by the United States census are those of agent, banker and broker, bookkeeper and accountant, clerk and copyist, commercial traveler, merchant and dealer (retail), merchant and dealer (wholesale), messenger and office boy, officials of banks and companies, packers and shippers, salesmen and saleswomen, stenographers and typewriters, telegraph and telephone operators, etc.

Most of the training for commercial pursuits is still obtained in and through the callings themselves. Schools for systematic vocational commercial training exist for only a few occupations, such as those of bookkeeping and accountancy, and stenography and typewriting. A few schools have also been founded to train salesmen and saleswomen, clerks, telegraph and telephone operators, etc.

(a) It is desirable that steps be taken to analyze and define the essential features of the various commercial occupations for purposes of adapting to each its appropriate vocational training. For examples, that there are two distinct forms of salesmanship, namely, counter or indoor salesmanship and field or traveling salesmanship. These require different school training.

(b) The term "commercial education" has also long been employed to designate courses of study dealing with specific phases of practice or knowledge applicable in, or derived from, the commercial callings. Such education has frequently been fostered as vocational education, although its actual outcome in vocational efficiency—that is, its positive vocational "functioning"—has not been demonstrated and is still in doubt. This has, perhaps, been particularly the case when these alleged vocational studies have been carried on in public high schools. The approach to them has usually been bookish and theoretical, and comparatively slight effort has been made to base either practice or intellectual study on the actual requirements of commercial callings.

The studies commonly employed in this capacity are accountancy, bookkeeping, commercial law, industrial history, history of com-

merce, business arithmetic, typewriting, stenography, business practice, etc.

(c) Much so-called "commercial education" in public and private schools doubtless has, or can be made to have, value as a part of liberal or general education designed to give young people some appreciation of, and insight into, the commercial occupations. Training and instruction of this character might also do much in directing young people toward efficient choice of commercial occupations and in giving vocational ideals.

(d) Unfortunately, no clearly defined line is yet drawn, especially in public schools, between commercial studies that are expected to "function" vocationally and those which are designed as part of a general or liberal education. This is a source of much misdirected effort, and probably many young people are permanently handicapped by the failure of schools to distinguish between these two objects.

5 (Definition). **Commercial education**, or preferably "**commercial arts education**," includes those studies derived from, or based upon, the commercial pursuits which are designed to give liberal or general education and to contribute to vocational guidance and vocational ideals in the field of the commercial occupations.

The term "commercial arts education" may seem somewhat forced in this connection, but there are good analogies in the departments of industrial arts education, agricultural arts education, and household arts education (which see).

6 (Definition). **Vocational agricultural education** includes those forms of vocational education the direct purpose of each of which is to prepare students for some one of the agricultural occupations.

Among agricultural occupations are those of agricultural laborer, dairyman, farmer or planter, gardener, florist or nurseryman, stock raiser, bee keeper, poultry keeper, etc.

Agricultural education of various kinds is now given in agricultural colleges. This includes much work of an essentially secondary grade (in extension classes, etc.), while a part of it is of a collegiate or professional level. A small number of agricultural secondary schools are also equipped to give actual vocational education toward agricultural pursuits.

Agricultural occupations being as yet less specialized than either professional or industrial occupations, agricultural education preserves a relatively general character. Much so-called "agricultural education" is still only quasi-vocational, because it does not give definite and actual preparation for agricultural vocations. But short lecture courses and demonstrations are valuable when offered

to experienced farmers, capable of carrying the knowledge thus acquired into practice, making it "function."

(a) The term "agricultural education" is also applied to various forms of agricultural study, frequently having as an alleged end vocational education in agriculture. As found in most schools, the studies embraced under agricultural education are usually bookish and theoretical. Their actual "functioning" in efficiency to pursue such callings as those of the farmer, gardener, florist, poultryman, stock raiser, etc., is often doubtful, but their contributions to general or liberal education may be important.

(b) Agricultural education, so called, as now carried on in many schools is, or can be made, a valuable factor in liberal or general education. Appropriate studies under this head can give appreciation of, and insight into, agricultural occupations and the importance of agriculture both as an economic pursuit and as a means of social development. Furthermore, the study of agriculture to this end may give important vocational guidance and lead to the establishment of vocational ideals. It can also be made a valuable means of illustrating applications of various forms of science. It can, therefore, be regarded as an important form of liberal education.

(c) In many cases school authorities seem as yet to make no clear-cut distinction between vocational agricultural education and agricultural instruction, which is actually nonvocational in its results, but may be made of importance in liberal education. As a consequence, effort in this direction is doubtless frequently misdirected.

7 (Definition). **Agricultural arts education** includes those forms of training and study based upon agricultural pursuits and designed to enhance general intelligence, to promote appreciation of agriculture as a form of economic activity, to show wherein various sciences have practical application to human affairs, and to give vocational guidance and to inspire vocational ideals as these relate to the field of agriculture. Agricultural arts education, therefore, constitutes an important division of liberal education, both in the elementary and the secondary field.

8 (Definition). **Vocational industrial education** includes those forms of vocational education the direct purpose of each of which is to fit the individual for some industrial pursuit or trade.

Among the trades and industrial pursuits enumerated by the United States census are those of the carpenter and joiner, mason (brick and stone), painter and varnisher, paper hanger, plasterer, plumber and steam-fitter, roofer and slater, oil-well worker, chemical worker, brick and tile maker, glassworker, marble and stone cutter, potter, fisherman, miner, baker, butcher, confectioner, miller, food packer, blacksmith, iron and steel worker, machinist, boiler maker, stove maker, toolmaker, wheelwright, wire worker, shoemaker, har-



ness maker, tanner, bottler, brewer, distiller, cabinetmaker, woodworker in general, brass worker, watchmaker, silver and gold worker, tinplate worker, bookbinder, box maker, engraver, paper-mill operative, printer, lithographer, dyer, cotton-mill operative, knitting-mill operative, silk-mill operative, woolen-mill operative, dressmaker, hat maker, milliner, seamstress, shirt maker, tailor, broom and brush maker, charcoal burner, steam engineer, fireman, photographer, tobacco operative, upholsterer.

(a) For many of the foregoing vocations no systematic vocational education at present exists, either in schools or under nonschool agencies.

Among the industrial occupations for which neither organized apprenticeship nor vocational schools as yet offer training are mill operatives (in general), food packers, box makers, general woodworkers, shoemakers (in factories), general iron and steel workers, etc.

(b) For a number of the foregoing occupations wherein skill is required, the chief form of training available at the present time is apprenticeship, of a more or less organized character.

The large majority of persons following such pursuits as those of carpenter, plasterer, plumber, stonecutter, machinist, etc., are still trained through the agency of apprenticeship.

(c) For some of the foregoing occupations, well-organized vocational schools (generally called trade schools), supported either privately or publicly, are available in various parts of the country, although the total number of workers trained by them constitutes, as yet, but a small proportion of those required by the industry.

Among the occupations for which definitely organized vocational schools, giving either complete training or partial training adjusted to the practice obtained in the industry, are these: Carpenter, house painter, plumber, machinist, bricklayer, cabinetmaker, patternmaker, sheet metal worker, bookbinder, sign painter, electrical worker, printer, dressmaker, milliner, etc.

In foreign countries well-organized day or part-time vocational schools are found also for such occupations as those of baker, butcher, weaver, cook, teamster, lithographer.

Some industries have organized special schools for such occupations as those of motorman, glove maker, photographer, linotype operator, telephone operator, confectioner, etc.

(d) The term "industrial education" is frequently applied to a variety of forms of practical, or apparently technical training, based upon operations characteristic of some industries.

Among the forms of so-called practical training to which the term industrial education is sometimes applied are manual training, sloyd,

mechanical drawing, technical training, mechanics arts training, printing, bookbinding, metal work, etc.

(e) Like commercial arts education, and agricultural arts education described above, the really valuable pursuit in "this industrial education" (which may properly be called "industrial arts" education) should be realized through the participation of the pupil in the practical phases of selected processes, as these may be found adapted to the pupil's experience, physical powers, etc. Practical participation in industrial arts processes can be supplemented by reading, visits to industrial establishments, experience in analyzing and assembling machines, etc., all of which may have as a controlling purpose the increasing of the pupil's general intelligence, the stimulation of his powers of wise utilization, the laying of foundations for vocational choice, and the interpreting of contemporary life. All these constitute valuable contributions to general education.

9 (Definition). **Industrial arts education** includes those forms of training and study based upon industrial pursuits and designed to enhance general intelligence and give vocational guidance in the field of industrial occupations.

(a) Reform schools for juvenile delinquents have been in the past, and are sometimes still, called "industrial schools." When these institutions ceased to be looked upon merely as prisons, or houses of refuge, public sentiment demanded that vocational training should be given in them, in view of the probable fact that neither the opportunities of apprenticeship nor of home vocational training would be available for these unfortunate youth. Hence, even 50 years ago a form of systematic vocational training was undertaken in reform schools. Probably only a small part of this training ever actually "functioned" in vocational power, because of wrong pedagogical methods employed.

10 (Definition). **Vocational homemaking education** includes those forms of vocational education the direct object of which is to fit for homemaking as practiced by the wife and mother in the home and also for some specialized forms as practiced by household employees, housekeepers, or other wage-earning assistants to the homemaker.

A large variety of more or less unspecialized activities are carried on in the home. These include the preparation of meals, laundering, house cleaning, garment making, garment repairing, the nursing of children, minor repair work in the equipment of the home, etc. In homes conducted on a somewhat elaborate scale, specialized forms of service may be found, the workers being housekeepers, cooks, waitresses, chambermaids, nurses, butlers, janitors, etc.

Among occupations which were formerly carried on in the home, but have been since specialized away from it, are those of spinning,

weaving, milking, butter and cheese making, tanning, barbering, brewing, food packing, shoemaking, furniture making, etc. Other occupations which now seem to be in process of being specialized away from the home are baking, garment making, fruit preserving, etc.

(a) As in the case of farming, there is comparatively little specific vocational differentiation within the average home. Notwithstanding the removal from the home of many specific forms of productive work, homemaking remains a distinctive and clearly defined vocation for the wife and mother living under normal family relations as well as for specialist workers in homes and institutions. It is ordinarily a composite vocation, utilizing various forms of skill and related knowledge. Vocational education for homemaking must, therefore, aim to produce as many forms of power as the distinctive home operations now require, each to a degree suited to the time, energy, and native ability of the learner. It is especially necessary that in the homemaker an harmonious union of various forms of skill and knowledge should be found.

(b) From 60 per cent to 80 per cent of all women eventually become homemakers. Modern social and economic conditions are such that the majority of these spend the years from substantially 16 to 20 or 25 in wage-earning pursuits (only a small proportion being connected with homes), after which homemaking is entered as a career to be followed for life, or at least for many years.

(c) During recent years, many forms of education have been introduced into private and public schools as designed to minister to the development of homemaking power or appreciation. These are variously named "household arts," "domestic science," "domestic arts," "household economics," "home economics," "domestic economy," etc. Frequently they have been introduced into schools as subjects of study and laboratory experiment on the same basis as other studies. The extent to which these studies "function" vocationally, if at all, for homemaking is yet in doubt, especially when they are followed only from two to five hours per week. In most instances it is probable that the training thus given should be rewarded as effective rather on the side of liberal than of vocational education.

(d) The study of household arts (with the aid of suitable textbooks, laboratory experimental work, etc.) can obviously be made a valuable feature of liberal education, in the sense that such study can improve standards of utilization and develop larger ideals of home life. Women exert an exceptionally large influence on standards of consumption in the fields of artistic products, economic utilities, and specialized service. For this reason, it is especially important that as a phase of their general education they should be instructed and trained as to most effective standards of utilization.



11 (Definition). **Household arts education** includes all those forms of instruction and training based upon the occupations of the home or household, and which are designed to promote higher standards of appreciation and utilization in the field of the activities associated with homemaking, to promote right conceptions of the social importance of the home as a nursery of childhood and a haven for the wage earners of the family, and to show wherein the various arts and sciences have practical application in domestic life. Hence, household arts education can be made a large factor in the liberal education of womanhood.

12 (Definition). **Nautical education** is the term used to designate those forms of vocational education, the controlling purpose of each of which is to train youths for such occupations as those of the fisherman, the sailor, the ship captain, and the like. These forms of training have not yet been clearly differentiated in the educational practice of America. A few special nautical schools of a technical character exist, and in the United States naval service facilities for training seamen are provided.

### III. PEDAGOGICAL PHASES OF VOCATIONAL EDUCATION.

1. **Major and minor phases.**—Vocational education, as respects its organization for teaching purposes, presents in almost every instance two quite distinct major phases and one minor phase; namely, the concrete, practical, or manipulative major phase; the technical or theoretical major phase, the subjects of study under the latter head being sometimes referred to as the “related subjects”; and a third relatively minor phase embracing those studies and practices designed to promote vocational ideals, general insight, and other knowledge and appreciation which are pertinent, but not directly necessary for the particular vocation for which training is being given.

In the training of the dentist there is required: (*a*) Practical work in filling, etc.; (*b*) theoretical study of anatomy, etc.; and (*c*) possibly some study of the history of dentistry, of the practice of dentistry in other countries, of the need on the part of the dentist of offsetting the strains of his calling by suitable exercises for the sake of his own health, etc. In the training of the teacher there are required: (*a*) Practice in teaching; (*b*) the study, from the standpoint of the teacher, of the subjects which she will expect to teach, as well as methods of teaching, school hygiene, etc.; and (*c*) the history of educational administration, the lives of noted educators, etc. In the training of the machinist is required: (*a*) A large amount of practical manipulative work in constructing valuable objects from steel or iron; (*b*) study of such phases of mathematics, drawing,

mechanics, etc., as apply to the practice of the machinist; and (c) possibly some study of the history of the evolution of the iron and steel industries, of the distribution of these industries in various countries, of special hygiene for metal workers, etc.

(a) The foregoing are the phases of a program of systematic vocational education. It is recognized, of course, that a program of liberal or general education may be carried on side by side with a program of vocational education. A student might give half his day to vocational education and the other half to liberal education; or he might give one week to the one and another week to the other. A more common arrangement is to have the student give the best part of his working day to vocational education, with provision made for some cultural or civic studies, exercises, or participation, in marginal time. For example, the Massachusetts program permits from 10 per cent to 20 per cent of the day to be given to cultural training. This may be in English literature, music, or other lines of interest and importance.

(b) The problem of the proper combination of general with vocational education is one to be determined on the basis of aims and the requirements of efficient practice in each field, taking due account of the economic necessities of the learner. It is contended in some quarters that, if general or liberal education be blended with vocational, neither form becomes efficient. The question as to how far the two forms may be adjusted within a given day or other period efficiently must be determined by the experiment.

2 (Definition). **The concrete, practical, or manipulative phase** of vocational education in any occupational field includes all phases of learning through actual and direct participation in the practical processes characteristic of the vocation itself.

The following are examples: The prospective physician obtains concrete training through his hospital service, the teacher in his practice teaching, the engineer in actual field work, the journalist by serving as reporter, etc. Persons preparing for the commercial callings are expected to receive concrete or practical training through typewriting and stenography of a presumably practical nature made a part of the course of instruction through various types of exercises in salesmanship, the undertaking of practical work in accounting, etc. Manipulative or concrete work in agriculture as a means of training is provided through having the learners actually engage in the raising of crops, on a large or small scale, participation in harvesting, and other practical work during summers and vacations, the care of domestic animals as a part of the animal husbandry course, etc. In various forms of vocational industrial education, practical work is provided through having prospective machinists manufacture parts of the equipment of the school, through the manufacture

of salable products, etc.; prospective dressmakers spend a part of their time in making a salable product, etc. Practical or manipulative work in homemaking involves the preparation of meals, the actual making and repair of garments, the care of children, etc.

Concrete, practical, or manipulative work in vocational education may be (a) on a nonproductive or (b) on a productive basis. Productive manipulative work may involve no compensation to the student worker or regular compensation to him. In general, modern pedagogical theory favors productive work as against nonproductive work, where practicable. The distinction is this: Nonproductive work is not commercially profitable; when the pupil is through, his product is laid aside or destroyed. Productive work is commercially profitable. Its results are used to increase the equipment of the school itself, to render service in the schools of the local community, or to be sold. Again, students who do productive work which is used in the school or sold may not be compensated for the same on the ground that it is their partial contribution toward the cost of their education, or they may receive a small wage for the same. Pedagogical theory favors the latter plan, where practicable, because of the greater interest evoked and because the environment produced is similar to that in which the pupil will later follow his vocation.

3 (Definition). **Productive practical work** includes all forms of practical work as a part of vocational education, the material results of which are of evident value to society.

The services of internes in hospitals, of prospective teachers in training schools, of boys doing their productive work on a home farm, of shopworkers in city schools doing repair work on school buildings, of homemaking pupils taking charge of the preparation of meals for schools, etc., all represent forms of productive practical work.

4 (Definition). **Nonproductive practical work** includes all practical work as a part of vocational training the output of which can be put into no practical use.

Examples: Business college students keeping books, doing typewriting, etc., of a nonmarketable character; agricultural school students raising products which are not marketed or consumed; engineering students making extensive surveys the results of which are of no commercial value; shop students constructing articles that are simply kept for exhibit or destroyed, etc.

(a) Vocational education in the past was carried on largely in shops, and through other commercial vocational agencies, under a more or less organized system of apprenticeship. The pupil learned almost exclusively through actual participation in concrete work. His tasks were sometimes graduated as to difficulty, either by chance or design. The pupil learned mainly through imitation, his superior

sometimes showing him the "tricks" and various devices. Vocational education under apprenticeship is usually more effective on its practical than on its technical side.

Many examples still survive of learning through apprenticeship. A locomotive engineer obtains his training first as a fireman. A nurse frequently obtains all of her training through actual nursing in a hospital. Until very recently, many teachers in England obtained their training solely as apprentices, being known as "pupil teachers." In many skilled trades, organized apprenticeship still survives, in one form or another. Leadership in many vocational fields is reached through promotion from the lower stages—essentially a method of learning through actual participation which is without the direction characteristic of apprenticeship.

(b) Because recognition of the value of actual participation in concrete work took place early in the development of vocational education in schools, endeavors have frequently been made to employ substitutes for participation in the actual processes themselves where participation in the commercial occupations is difficult or impracticable. This may be called practical work on an "exercise" basis.

The following are examples: The law student practices in a moot court. The engineering student carries on surveys around the campus. Commercial schools devise imitation money, set up receiving windows, etc., and carry on "make-believe" business having some semblance to actual business. The agricultural student is given small plats on which to raise plants, or he shares in a form of "group" or "gang" labor directed by some teacher. The wood-working student is given exercises on lathes and other machines, the products of such exercises having no commercial value.

(c) Several problems are still unsolved as regards concrete work in many lines of vocational training. Can commercially practical work be presented in properly graduated stages? What shall be the unit, or project, in the practical work? Can practical work in a school take the place at all of practical work under commercial conditions apart from the school? Is it economically desirable that the practical work of a school be sold in open market? Shall the pupil be compensated for his practical work? How shall the practical work be related to necessary technical training? How far shall the student be permitted to subdivide his practical work in the direction of becoming a specialist, as in machine-shop working, textile working, etc.?

5 (Definition). **Apprenticeship** is a term here used to include all forms of systematic vocational education through the participation of the learner, under the direction of skilled workers, in the actual work of various productive occupations.

Well-known examples are the apprenticeship arrangements in the various skilled trades. Other examples, not always included under the term, are the "pupil-teacher system," formerly prevalent in England, the training of nurses in hospital practice, the training of commercial experts in commercial houses through systematic advancement from one type of employment to another, the methods employed in the middle ages of training knights and priests, the methods formerly prevalent by which physicians, lawyers, etc., first took service as youths under older practitioners, etc.

Apprenticeship as a means of vocational education is generally believed by students to be declining in possibilities and importance. It has almost disappeared in all the professions except nursing, acting, and journalism. In the industries the substitution of manufacturing processes for crafts production, and the subdivision of work made possible, has greatly diminished the field for apprenticeship training. In occupations calling for increased amounts of technical knowledge (various electrical trades, plumbing, gardening, etc.) the methods of apprenticeship prove unequal to the task of giving, in satisfactory form, technical instruction. Evening vocational schools were first organized to compensate for this deficiency.

6 (Definition). **Technical, theoretical, or "related subject" phases of vocational education** include those readings, lectures, and studies and exercises in mathematics, science, drawing and art, laboratory exercises, etc., which furnish organized knowledge of, and practical insight into, the so-called "technical aspects" of vocations. The technical studies appropriate to any vocation can only be determined by a study of the requirements of that vocation itself.

The following are examples of the technical knowledge required in certain vocations: For the physician, physiology, special phases of chemistry, materia medica, etc.; for the electrical engineer, certain phases of applied mathematics, drawing, the principles of electricity, some of the principles of mechanics, etc.; for the farmer, agricultural science, embodying selected phases of botany, soil physics, chemistry of fertilizers, hygiene of domestic animals, meteorology, accounting, exchange forms of mechanics as applied in farm machines, etc.; for the bookkeeper, some phases of mathematics; for the house carpenter, certain phases of drawing, mechanics, building materials, and mathematical calculations; for a teamster, local geography, mechanics of vehicles, hygiene of domestic animals, etc.; for the dressmaker, certain phases of art, drawing, mechanics, etc.; for the homemaker, specific phases of food chemistry, decorative art, simple forms of mechanism, etc.

(a) With regard to the great majority of vocations, no satisfactory analysis has yet been made of the related technical studies which are



pertinent and valuable. But it has become evident that the content of technical training which actually functions in many vocations is much less than has been assumed. The inherited traditions of academic education have caused many people to believe that all of the phases or parts under a given inclusive subject should be studied, notwithstanding the absurdities to which this contention leads. For example, botany and chemistry as separate abstract subjects are sometimes taught in agricultural schools; prospective mechanics are induced to study algebra and geometry; and a prospective house carpenter is urged to take a general course in mechanical drawing, although, in each case, the successful workers in these fields will employ only very limited and special phases of these subjects. It is obvious that progress in the development of programs of vocational education will involve a clear differentiation of the technical training needed in each vocation. Experience will probably show that so-called "foundations" in general knowledge of abstract scientific, or mathematical, or art subjects, is often relatively valueless for vocational purposes.

(b) In some discussions of vocational education the related technical studies are sometimes called the "academic subjects." This usage is confusing, and should be discouraged. The word "academic" should be restricted to the field of general, or liberal, education.

7 (Definition). A technical school is a school designed to give technical knowledge only, as that is involved in some recognized vocation or group of related vocations.

The following are examples: Schools of law and medicine originally taught only the more theoretical phases of these professions. Only in the more recent stages of their development are they introducing practical work as a means of instruction. Schools of engineering originally taught chiefly engineering mathematics, drawing, science, etc., giving little or no practical work. Some schools of technology still confine themselves to this; but in many others shop-work, summer-camp work, compulsory practical service in mines, etc., are now added, to give necessary practical experience. The earlier agricultural colleges and schools taught primarily the mathematics and sciences supposed to constitute a basis of knowledge for agricultural practice. Some commercial schools offer only informational studies regarding commercial operations. Technical high schools teach chiefly certain phases of applied science and art, illustrated with laboratory practice. Much of the home making taught in contemporary high and other schools, under such heads as "household arts," "domestic economy," "household economics," etc., is primarily an attempt to give technical knowledge only of the processes involved in home making.

(a) Technical education had its origin and took its shape primarily through the attempts of society to supplement apprenticeship as a means of vocational training, the apprenticeship giving practical experience, but not related technical knowledge. Evening vocational schools, as well as day schools, came into existence, first, to give related technical knowledge.

The first medical colleges, as well as other professional schools, in many instances assumed that the student had already served an apprenticeship as an assistant to a practitioner.

(b) The value of technical education when administered without connection with practical training must be considered solely with reference to its actual efficiency in contributing to a complete scheme of vocational education. In some of the higher fields, as engineering, technical knowledge alone may constitute a very valuable foundation, whereas, in many of the trades, it may, if unaccompanied by practical experience, be almost valueless. The entire matter is one requiring further scientific study.

(c) Secondary technical schools as now found in the industrial, agricultural, and commercial fields can only occasionally be called "vocational schools" in the sense used here, because the instruction in them is not adjusted to the requirements of a distinctive vocation. Commonly their teaching is of a general nature, unrelated to the actual requirements of callings as now organized. It is probable that their teaching does not generally "function" in direct vocational power. In a few cases the effects of the training given may be vocational, as in the case of draftsmen and analytical chemists.

(d) Technical schools sometimes offer studies the actual value of which may consist in the establishing ideals and appreciations. A normal school, for example, may offer the history of education, which is not properly a technical study, but the study of which may give rise to ideals of teaching. Such a study properly belongs under the head of "General vocational studies."

8 (Definition). **General vocational studies** are those which, when considered with reference to a particular calling, seem to lead to the development of ideals, general interest, and social insight, but without contributing to specific forms of useful knowledge, skill, or power.

The following are examples: The physician may study the history of medicine or the hospital practices of the past, or he may read the biographies of such men as Jenner, Pasteur, and Lister. The engineer may study economics and the rise of modern industry, labor problems, and geological science. The teacher may study general psychology and the history of education. The prospective machinist may study the general literature of his subject, the history of the evolution of steel working, industrial hygiene as related to his call-

ing, etc. The prospective clerk may study commercial geography, the history of exchange, and modern banking problems. The prospective home maker may read of the homes of the past or of the present in other lands, etc.

(a) It is obvious that in and about any particular calling a large amount of literature may be gathered which, properly used, should do much to promote ideals, to give insight into the social relationships of the calling, to develop an appreciation of its hygienic and psychological aspects, and to lay the foundations for an appreciation of the possibilities of advancement for the worker.

(b) The actual value of so-called general vocational education is still open to question. It is exceedingly easy to organize and administer various forms of "general vocational" education in accordance with academic traditions. It may lead to "industrial intelligence," a quality which, if it exists as ordinarily conceived, is much in demand. It is probable that the actual value of general vocational education is very dependent upon the degree to which it has been preceded by foundations in practical experience and definitely related technical studies.

#### IV. PEDAGOGICAL DEVICES IN VOCATIONAL EDUCATION.

Vocational education requires the development of new and sometimes unfamiliar pedagogical devices, most important of which, for the present, are those signified by the terms "projects," "short unit course," "correlation of technical and practical training," and "productive work."

1 (Definition). A **project** in vocational education is a definite unit of instruction which combines practical or manipulative achievement with a definite enhancement of power to apply related technical knowledge.

(a) Practical work alone may correspond to what is known as a "job" in many lines of industry. A project is an "educational" job; it has educational value, and it ought to have economic value.

(b) Growth in capacity to apply related technical knowledge may involve application of general knowledge already obtained, as where a student in carpentry learns to make further use of his previously acquired knowledge of board measure; or it may involve the acquisition of new technical knowledge, as that is immediately related to the job in hand.

(c) A complete project usually involves the following steps on the part of the learner:

1. Purposeful consideration of the conditions to be met in undertaking the job.
2. Planning how to meet these conditions, in terms of the materials of the trade, trade operations, suitable tools, etc.



3. Preparation of needed preliminary working aids in conventional forms, such as drawings, working plans, etc.
4. The performing of such calculations as may be necessary, including figuring cost, ascertaining amount of stock to be used, and other conditions.
5. The execution of the job as planned, and in accordance with specifications.
6. The submission of a proper report of the job.
7. In some cases, a disposal of the project on an economic basis.

The following are examples of projects: An engineering student employed to lay out a grade as required by a railroad; a hospital interne given charge of a case; a teacher taking full charge of a group of pupils; an agricultural student undertaking to raise an acre of corn, and to market the same, or to take charge of two dairy cows for a year, including the proper care, feeding, and milking of these; an industrial-school student undertaking a definite job of work as this is carried on in commercial enterprises; a pupil in a trade school making a dress, or a group of pupils in a school of carpentry erecting a cottage; a student in homemaking preparing the family breakfast for a month, etc.

(*d*) Projects may be subdivided into major and minor projects, the latter being subdivisions of major projects.

For example, a boy in an agricultural school might undertake to raise an acre of potatoes, this being his major project. For practical purposes, he would subdivide this into a series of minor projects, each one a unit in itself. A class of pupils in an industrial school might undertake the construction of a machine, each boy having some one piece of work assigned to him as his minor project, or even some one operation. A girl undertaking the preparation of the family breakfasts for a month might make her minor project temporarily the study and practice required in preparation of one dish.

(*e*) It is obvious that projects may be individual or cooperative. It is conceivable that in industrial schools, large cooperative projects might be undertaken by a class, with appropriate subdivisions, each subdivision forming a project by itself.

(*f*) The project has no definite counterpart in academic or general education. Much of the work in general education was formerly organized on the "lesson unit" basis. In such subjects as mathematics, history, geography, English, it is now organized on the "topic unit" basis. The study of a classic selection in a foreign language, and the execution of a manual training enterprise provide the nearest analogies.

(*g*) The alternative to the project organization of vocational work is, on the one hand, the job as the unit of practical work, and,

on the other, the logically organized course of instruction in technical subjects.

(h) In many lines of vocational education, satisfactory series of projects have not yet been developed. Obviously, the development of a project system of organizing vocational work presents very great difficulties, and especially to persons prepossessed in favor of the logical organization of technical subject matter.

2 (Definition). **The short unit course** is an intensive form of training and instruction which is intended to meet, in a limited number of lessons, a specific need of a particular group of learners. Each unit deals with some one teachable phase of a trade or other occupation, and is complete in itself.

The short unit course has thus far been worked out primarily only in the fields of agricultural, industrial, and homemaking education. In agriculture, short unit courses are found in connection with extension work, where, in the course of a week or a few weeks definite instruction is given in both the manipulative and technical phases of some one specific field of practice in agriculture or animal husbandry. In evening industrial schools the short unit course is designed to give quite specific instruction, either of a manipulative or technical character, in some one phase of the trade or occupation being followed, or to be followed. It is assumed that the short unit course, when technical in character, will be related to the practical work already being followed by the learner.

The following are examples: Five lessons in the use of spraying; 5 lessons in orchard cropping; 5 lessons in farm accounting; 5 lessons in grafting; 10 lessons in kiln drying of lumber; 10 lessons in the use of the buzz planer; 5 lessons in the use of the sliding rule; 6 lessons in thread cutting; 20 lessons in cotton sampling; 5 lessons in the making of a shirt waist.

3 (Definition). **The correlation of technical studies and practical work** includes such pedagogical devices as involve the integral relation of technical studies with jobs of practical work as found in the project method of organization.

The following are examples: Mechanical drawing may be taught as a general subject, apart from its particular application to the work of the machinist, house carpenter, or dressmaker (probably general, or general technical, rather than vocational); or, as opposed to this, it may be taught in intimate correlation with the practical work of training for various specific vocations. A pupil studying house carpentry may acquire power in mechanical drawing through exercises closely adjusted to the practical work which he is taking from day to day. Different forms of drawing would therefore be required for the machinist, the plumber, the electrician, etc.

Such sciences as botany and zoology may be studied by a prospective farmer, independent of their particular applications in agriculture (therefore general education). As opposed to this, the student of agriculture may undertake to raise an acre of potatoes, and in conjunction with this problem study those phases of plant and animal life which are essential to the success of his enterprise.

A girl may study the mechanical principles of movement of air currents as a matter of physics (general). As opposed to this, she may be instructed in the practical problems of making various types of stoves burn effectively, and in conjunction with this problem such matters relating to the circulation of air currents in stoves as will reinforce her practical experience.

In view of academic traditions, it is not difficult to teach various sciences, as well as mathematics and drawing, as separate abstract subjects. It is now generally believed that for most pupils, at least, the learning of these subjects in the abstract does not contribute to efficient vocational training. On the other hand, the integral correlation of phases of these technical studies with practical work presents obvious pedagogical difficulties, but its vocational value is unquestioned.

#### V. TYPES OF SCHOOLS FOR VOCATIONAL EDUCATION.

**1. Vocational schools classified.**—Vocational education in schools, like other forms of education, may be carried on in day schools (in which the student is under the control of the school for substantially all of his working time); evening schools (in which the student is regularly employed, and is under direction of the school only for his evening hours); or continuation schools (in which the student is regularly employed, and is under control of the school only for a limited number of hours taken from his working day).

These schools may be further classified as follows:

Day vocational schools:

- (a) Unified, or combined.
- (b) Dual, or cooperative—
  - (1) Full responsibility.
  - (2) Part responsibility.

Evening vocational schools:

- (a) Preparatory.
- (b) Extension.

Continuation vocational schools:

- (a) Preparatory.
- (b) Extension.

**2 (Definition).** A day school for vocational education is one which requires that the pupil be under the direction of the school for substantially the greater part of each working day, for at least five days in each week, for the major portion of each year.

Day vocational schools are of several types, according as the practical or productive work in them is done under the same roof and in

direct relation to the technical instruction, or separately from it. Among these are the "unified" or "combined" type, and the "dual" or "cooperative" type.

3 (Definition). A day vocational school of the **unified or combined type** is one in which all phases of a complete program of vocational education are carried on under one roof, or general building, under the immediate control and direction of the school.

The following are examples of unified, or combined, day vocational schools: A medical college immediately controlling its own hospital, and opportunities for clinical and practical work; an engineering college possessing its own shops, summer camps, mines, etc., for experimental and practical work; an agricultural school owning its own farms, gardens, and live stock; a commercial school with differentiated opportunities for various forms of practical work in accounting, typewriting, salesmanship, etc.; an industrial school having its own productive shops and other facilities for constructive work; a home-making school owning a house or apartment in which practical housekeeping is carried on, including such branches as cooking, sewing, laundering, care of rooms, nursing, etc.

It is a present tendency in vocational education to insist that the practical work given in training shall be of a productive, commercially profitable, and marketable character. Hence, we have instances of medical colleges managing serviceable hospitals; normal schools using as practice schools public schools in the community; schools of carpentry leasing or buying land, erecting buildings, and selling the same; dressmaking schools marketing their product; electrical workers' schools doing necessary labor about school buildings; printing schools taking orders on a commercial scale; home-making schools supplying meals and other products for sale or use outside; etc.

A few instances exist where day vocational schools have complete control of practical work carried on within the confines of an industrial or other establishment at some little distance, but which is, nevertheless, completely under the control of the instructing force of the school.

4 (Definition). A day vocational school is of the **dual or cooperative type** when the complete program of vocational training involves the cooperation or other relationship of two agencies, one, more specifically the school, giving technical and related instruction, and the other an institution or agency having commercial or practical ends in view, but placed in a cooperative relationship as a means of furnishing opportunities for practical experience to properly prepare pupils.

The dual, or cooperative, day vocational school is of two distinct types, according as (*a*) the authorities in control of the school also

control the adjustment and assignment of the practical and productive work as this may be used for educational purposes, or (b) the control of the practical work for learners is independent of the school authorities.

5 (Definition). A day vocational school of the dual or cooperative type is a **full-responsibility school** when it has the direction of the arrangement of practical work for learners when this is carried on in independent establishments.

The following are examples of day vocational schools of the cooperative type having full responsibility: A medical college sending its students into hospital practice in a hospital under other management, but with arrangements whereby the work done by the students shall be completely under the direction of the college authorities; a normal school sending its students into the public schools of a local community, the students remaining completely under the direction of the normal school authorities; a group of engineering students taking a job of practical work, to be carried out wholly under the direction of the college authorities; an industrial school sending a group of boys into an industrial establishment, where equipment and space are placed at their disposal for carrying out productive work, the actual program of such work being under the direction of the school authorities; an agricultural school, the pupils in which carry on, on their home farms, practical productive work under the complete direction of the school.

6 (Definition). A day vocational school of the dual or cooperative type is a **part-responsibility school** when the actual work of students sent into other establishments for purposes of practical training is controlled by, and largely under, the direction of the industrial establishment itself.

The following are examples of the dual or cooperative type having part responsibility: A normal school sending its students into public schools where these students are not under the control of the normal school, for the sake of practical experience; an engineering school arranging that its students shall have opportunities for practical work on railroads, in mines, and elsewhere, in the capacity of assistants or laborers; a commercial school sending its students into offices or mercantile establishments during busy seasons or at other times, for practical experience; an industrial school arranging the group of its students who shall, during alternate weeks, or at other regular intervals, work as apprentices, assistants, or laborers in industrial establishments; an agricultural school sending its pupils out on farms for practical experience, or in cooperation with parents or others in carrying out practical processes on the farm; a home-making school sending its pupils into their own homes to carry on the home processes, subject to the requirements of the home itself.



(a) The day vocational school of the cooperative "part responsibility" type must not be confused with the "part-time" school, which receives pupils from industrial establishments where they are already employed. (This type of school will later be defined as a modified form of continuation school.) At times the actual distinctions in character between the operations of the two schools may be difficult to define; but the essential difference is determined by the fact that in one type the pupils go from the school to the employing establishment with a view to obtaining practical experience, whereas in the other type the pupils go from the employing establishment to the schools for the purpose of obtaining supplemental training. The latter is properly "trade-extension training," discussed under continuation education.

(b) The efficiency of any form of dual or cooperative vocational education depends upon the degree to which the practical experience obtained in the shop and the technical instruction obtained in the school are coordinated, correlated, and integrated. In some existing so-called part-time plans the practical work of the pupil is only remotely related to the technical instruction. Such an arrangement results in poor vocational education. An agricultural student spending his summers on a farm will obtain valuable practical experience, but much of it, being unrelated to his school work, will not constitute a valuable part of vocational education. Technical instruction in homemaking, without practical experience under the direction of the school, is but poorly supplemented by the miscellaneous practical experience obtained at home. To send a commercial pupil into an office or mercantile establishment during a busy season is much better than no practical experience during the course of school training; but such practical experience will be related only remotely to the concrete teaching. Normal schools find the practice of sending students into schools not under their direct control of doubtful value, and in any case helpful only in the last stages of their vocational training.

(c) Theoretically, vocational training under cooperative or dual arrangements should ultimately prove the most effective, if proper coordination of the separate agencies can be procured, because then the required practical experience is obtained under genuinely commercial conditions, a situation most difficult to develop in a unified day vocational school. Satisfactory coordination of effort between school and commercial establishment for dual or cooperative vocational training is now difficult to obtain, partly (a) because commercial and industrial establishments conducted for profit are indisposed to advance learners through successive stages of practical work, and (b) because teachers of technical studies are indisposed or unable to adjust technical instruction to the requirements of practical

experience, preferring to teach technical studies on some purely logical basis. In time the following two methods of meeting these difficulties may be developed:

(1) Vocational schools having groups of pupils in need of, and ready for, practical experience may offer the services of these to industrial establishments on suitable terms, on condition that these pupils, under the supervision of instructors, be allowed to fit into practical work at such places and to such degrees as will be educationally profitable, while at the same time involving no economic loss on the part of the employer. (This arrangement would be especially suited to pupils from 14 to 18 years of age.)

(2) Teachers of technical subjects will be required to adjust their instruction so that, as their students who are regularly employed in establishments are advanced from stage to stage of work, the technical teacher will adjust his training to the requirements of the practical work. This will usually require that subjects of study based upon purely logical foundations in technical subjects be replaced by short unit courses and exercises based upon the practical work of the student.

7 (Definition). **Evening vocational schools** are schools in which the hours of instruction lie outside of the customary working day. Evening vocational schools are of two types, extension and preparatory.

8 (Definition). **The extension evening vocational school** is a school in which a young person already employed in some occupation receives, during evening hours, vocational education in subjects closely correlated with the work which he follows during the day, and calculated to assist him toward greater efficiency or more advanced work in that calling.

The following are examples: A young man following the trade of machinist, receiving an evening-school training in mechanical drawing and calculations related to his work, or practical instruction on machines closely related to those he operates during the day, or calculated to give him more technical knowledge of them; a man already engaged in raising poultry, obtaining in night classes technical instruction in the more scientific phases of poultry raising; a man engaged during the day in the practice of medicine, law, or engineering, studying in an appropriate evening school subjects related to his professional work; a domestic employed in a home, studying more advanced phases of cooking and sewing, in evening classes.

9 (Definition). **Preparatory evening vocational schools** are those in which is offered vocational training unrelated to the occupation followed by the student during the day.

Few satisfactory examples are yet available as to profitable evening preparatory vocational education. The time is usually too short, the student too tired or uninterested to make satisfactory progress. The following examples are suggested: Girls in textile mills studying homemaking, the latter work being divided into short units, such as shirt-waist making, the preparation of lunches, laundering, etc. (as now provided in special legislation in Massachusetts); a book-keeper taking machine-shop practice, with a view to becoming a trained worker upon a special machine; a clerk studying, in an evening law school, for the purpose of passing bar examinations.

It is important to consider how far preparatory work in evening vocational schools may be developed in the future on what is known as the "short-unit" basis. The most successful extension work in evening schools of a definitely vocational character is now organized on the short-unit basis, which means that the learner is enabled to acquire skill in a particular process, with a particular machine, or to learn how to solve certain problems or to use certain devices, the necessity for which appears in connection with his daily work. It is possible that in evening trade preparatory schools similar results can be procured by a strictly practical "short-unit" organization.

10 (Definition). **Continuation vocational schools** are schools which are attended for a limited number of hours each week, within the customary working-day, by persons regularly employed.

(a) Continuation vocational schools, like evening vocational schools, may be "trade extension" or "trade preparatory" schools.

(b) In practice evening vocational schools are adapted to workers upward of 17 or 18 years of age, while continuation vocational schools are primarily adapted to young workers from 14 to 18 years of age.

11 (Definition). **Extension continuation vocational schools** are schools giving instruction or practice directly related to the occupations being followed by the pupils.

If the time given to the school is considerable—perhaps alternate days or weeks, or a half of each working-day—then such schools are often called "part-time schools." Many, if not all, of the great variety of occupations followed by young persons offer opportunities for supplemental or extension training in vocational schools on the continuation basis. The following are examples: A messenger boy learning the geography of the community in which he works in order to improve his efficiency as a messenger; a machinist being taught in short-unit courses a variety of devices and operations essential to his advancement or greater efficiency; a salesgirl being taught devices of salesmanship; a farmer being taught particular phases of tillage, animal husbandry, etc.



12 (Definition). **A preparatory continuation vocational school** is one which undertakes to teach the student a new trade or other occupation, or to give him an essential part of the training required for such trade during hours in which he is in attendance.

13. **Modified forms of continuation vocational education.**—Various modified forms of continuation vocational education exist, according to the character of the occupation followed and the time available for related study.

Part-time vocational education includes plans whereby young people regularly employed are released for regular periods, sometimes alternate weeks, in order to obtain instruction and practice in matters related to their occupations. Farmers during dull seasons attend the short courses offered under extension agencies or in agricultural colleges. Apprentices are sometimes sent away to other establishments for temporary employment, primarily to learn new or related processes. Physicians in practice sometimes engage in hospital practice for short periods, in order to obtain new knowledge. In Germany and England the more capable workers in certain technical trades are sent to special schools for limited periods to acquire mastery of mathematical and technical processes needed in order to become foremen or overseers.

“Improvement” or “general” continuation schools, not of a vocational character, are common in Germany and are found at present in two or three States of the United States. These aim to utilize the continuation period of instruction to further general education.

## VI. ADMINISTRATION OF VOCATIONAL EDUCATION.

The administration of publicly supported vocational education involves the same problems as those found in the public control and direction of general education. The relationship of the administrative organization of general education to the administrative organization of vocational education introduces questions of “dual” versus “single” control. The types of schools and the internal organization of schools introduce problems of differentiation of schools, and divisions and departments within schools.

1 (Definition). **Dual administrative control** of education exists when, either in the State or in the local community, or in both, the agencies for the control of vocational education are distinct from those for the control of general education.

Examples. In Massachusetts for several years a commission on industrial education had complete authority over industrial schools on behalf of the State, its operations having no connection with those of the existing State board of education. In a few Massachusetts

communities, separate boards of trustees are in charge of industrial schools.

2 (Definition). **Single administrative control** is found when vocational schools are organized and supervised by the same authorities as those charged with responsibility for general education.

In Massachusetts at the present time, the State board of education exercises certain functions alike with reference to vocational and general education. In most Massachusetts communities, a local school committee, working through a superintendent of schools, is in charge of both forms.

In practice, neither dual nor single control is found in a pure form. Experience shows the wisdom of arrangements whereby, in communities properly appreciative of vocational education, there shall be ultimate single control, but with a differentiation of specific agencies for the direction and supervision of each form of education.

For example, in Massachusetts a single board of education, working through a commissioner, supervises on behalf of the State vocational education and so much of general education as it is authorized to supervise under the law. Under the commissioner, however, is one deputy commissioner designated to deal with vocational education, and another deputy commissioner to deal with other forms. Wisconsin, Indiana, New York, Pennsylvania, and Connecticut present examples of more or less modified forms of control. In some instances, where separate local boards exist, the board for vocational education may be created by the board in charge of general education, or the two boards may have common membership.

3 (Definition). A **vocational school** is an organization of instructors, pupils, courses, buildings, equipment, etc., devoted to vocational education for one or more distinct vocations.

An analogy is found in university organization, where, under one general control, departments, or schools for the teaching of the various professions and the liberal arts exist.

4 (Definition). A **vocational department** in a vocational school is an organization of teachers, equipment, etc., designed to train young people for a single recognized occupation.

Thus, a vocational industrial school may have departments for the training of plumbers, patternmakers, cabinetmakers, printers, etc., and experience may show that very little of the actual training required for these different occupations will be alike or in common. A vocational commercial school might have departments for the training of accountants, stenographers, clerks, salesmen, etc. A department of "general instruction" in a vocational school is an organization of teachers, equipment, etc., designed to give the non-

vocational instruction required in common by several departments of a vocational school.

5 (Definition). **A division in a vocational school** includes two or more departments dealing with related materials, and involving, to some extent, related processes.

Thus in a large vocational school there might be a wood-working division embracing such departments as patternmaking, cabinetmaking, and house carpentry; a machine-shop division; a printing division, etc.

6 (Definition). **A departmental advisory committee** in the administration of vocational education consists of two or more persons, preferably representing, respectively, employers and employees in a given vocational field, for which the department to which it stands in an advisory relationship is giving vocational training.

The successful administration of vocational education under public control requires the active cooperation of representatives of the occupations for which training is being given. A useful means to this end, where vocational schools are under the general direction of the regular school authorities, is the advisory committee consisting, in the main, of employers and employees in the particular industry for which a given department is offering vocational training. Good administration requires that the advisory committee shall be brought into intimate consultative relationship to all new proposals as to standards and conduct of vocational training in the department concerned. The responsible head of the department must, in an executive capacity, be responsible for securing the conditions which shall enable the advisory committee to be active and effective.

## VII. PRACTICAL ARTS SCHOOLS, DEPARTMENTS, AND STUDIES.

In private and public schools a variety of studies and practices have developed during recent years that may be described collectively by the words "practical arts." Various forms of practical arts education are to be sharply distinguished from vocational education. Experience proves that practical arts training, of one form or another, may make valuable contributions to general education. It is not yet evident that practical arts education, as ordinarily carried on, makes substantial contributions to vocational efficiency. It may be made to affect vocational choice and perhaps stimulate vocational ideals. Among the forms of practical arts education are these:

1. **Manual arts training in lower grades.**—Manual training in lower grades is that form of practical arts education in which boys and girls, usually during the work of the first six grades, have practice with a variety of exercises or projects resembling projects carried on in practical life.

This manual training includes whittling, clay modeling, paper folding, picture mounting, needlework, weaving, and a variety of other constructive activities within the range of the experience of children under 12 years of age. In this work, boys and girls usually do the same exercises, and these are taught by the regular class teacher.

**2. Manual training in upper grades and high schools.—**Manual training in upper grades and high schools, as the term is now used, applies mainly to wood and metal working, including at times printing, bookbinding, and various forms of constructive work as arranged for boys from 12 to 16 or 18 years of age.

In this field of manual training, well-defined programs of bench, forge, and metal working are now found. This work is usually taught by a departmental teacher.

**3. Household arts for upper grades and high schools.—**Corresponding to manual training for boys from 12 to 18 years of age are now found in upper grades and high schools a variety of practical exercises in cooking and sewing, and occasionally in other home-making fields, designed to give girls from 12 to 18 years of age insight and taste with regard to domestic operations.

In forms slightly, if at all, modified the same subject is called "home economics" and "domestic economy." Sewing and its allied lines are sometimes included under the term "domestic art," while cooking and its allied lines are sometimes called "domestic science."

**4. Agricultural arts education.—**In some elementary and high schools exercises based principally upon tillage are now found as constituting a phase of general education. In some cases home gardening, school gardening, and laboratory work in agricultural science are added, as well as reading exercises regarding live stock, etc.

**5. Commercial arts or business education.—**In elementary and high schools a variety of studies and practical work in book-keeping, typewriting, commercial paper writing, and the like have been introduced in recent years, but no real distinctions between "vocational" commercial education and "general" vocational education have yet been made.

**6. Practical arts high schools.—**Under the influence of the movement for manual training a variety of special forms of high schools have developed, each frequently with some special characteristics. They are variously known as "manual-training high schools," "manual-arts high schools," "mechanic-arts high schools," "technical high schools," etc. A practical-arts high school in Boston is organized for girls' work in household arts exclusively. Technical or manual training high schools frequently have departments of household arts for girls.

## VIII. PREVOCATIONAL EDUCATION.

1. (Descriptive). Within the last few years the term "prevocational education" has been introduced into educational literature, apparently with several meanings.

(a) The term "prevocational education" sometimes refers to studies and practices which, while not constituting a specific part of vocational education, nevertheless, are assumed to be a valuable or even essential preliminary thereto.

In a broad sense, ability to read and write is preliminary and essential to almost any form of vocational pursuit under modern conditions. Similarly, a knowledge of arithmetic is essential as preliminary to the commercial and many other callings. In professional education biology and chemistry, for example, are frequently spoken of as "prevocational" to the study of medicine; history and economics to the study of law; Greek and Latin to the study of theology; mechanical drawing and trigonometry to the engineering professions, etc. Similarly, it has been held that manual training or sloyd (tool work with wood and metals) can be "prevocational" to the mechanical trades. Whether any particular study "functions" as prevocational training can, of course, be determined only by observation and experiment.

(b) The term "prevocational education" at present seems more commonly to be used to designate programs of instruction and training designed to assist an individual in making an intelligent choice of an occupation, through giving him opportunity to participate in a series of practical experiences related to many vocations.

For example, it has been asserted that manual-training courses are, or can be made, of value in enabling a boy to "find himself" as regards his natural aptitudes for some one of the tool trades. Similarly, it has been asserted that so-called "commercial" studies and practices as found in public high schools enable the youth to "find himself" as regards his aptitudes for some commercial calling. It has been claimed that students taking mechanical drawing frequently discover from this their qualifications or lack of qualification for various trades in which mechanical drawing applies.

(c) The importance of prevocational education of the type described under (b) increases in proportion as intelligent vocational guidance develops, on the one hand, and varied opportunities for systematic vocational education are established, on the other. We may assume that, in time, in any urban community a large number and variety of departments of vocational education will be open to a youth at 14 or 16 years of age. It will be important that the youth choose wisely the school which he shall enter. It is not economical on the part of a vocational school to admit a considerable number

of persons who must early be eliminated because of innate or other disqualifications for the work selected. If programs of prevocational education can be developed which will accomplish this end, much good will result.

It has been suggested, for example, that through the seventh and eighth grades, instead of the present somewhat rigid courses in manual training, there should be presented to boys a large variety of opportunities to participate in constructive and practical work along industrial, agricultural, and commercial lines. The exercises and opportunities for practical achievement should be related as closely as practicable to various occupational pursuits as now followed. Considerable opportunity for election should be given, and for the early giving up of uncongenial forms of work. Good amateur standards should prevail in this work, rather than so-called "professional standards." The teachers should be persons possessing varied forms of skill and wide industrial experience, selected with a view to their capacity to advise boys wisely as to vocations in which they would probably succeed. Similarly, it is suggested that opportunities could be provided for girls to "find themselves" in homemaking, industrial, and commercial pursuits.

(d) The problem of the immediate future is to define the purposes of prevocational education, if useful purposes can be found, and then to adapt programs of practice and instruction to the realization of these ends.

2 (Definition). **Prevocational education** includes any form of education designed to enable a youth to discover for which one of several possible vocations he is best fitted by natural ability and disposition, the program of instruction and practice for this purpose being based mainly upon actual participation on the part of the learner in a variety of typical practical experiences derived from the occupations involved.

## IX. VOCATIONAL GUIDANCE.

1 (Descriptive). Vocational guidance represents an attempt (first through philanthropic initiative and support, and later appearing through agencies for public education) to lessen the misdirection of energy and general loss of effectiveness at present involved in the efforts of young persons, especially in urban centers, to find suitable employment.

The historic agency of vocational guidance has been the home. Under primitive and settled conditions, the occupation of the child usually followed that of the father. In the modern urban community, the home becomes less and less adapted to giving effective vocational guidance. There is also available, now, a large amount of organized knowledge as to hygienic conditions surrounding any



given field of work, the requirements which such work makes for intelligence or special training, etc., which can be imparted by organized effort. As conditions now exist, youths are commonly unprepared to take advantage of the opportunities for becoming more efficient and for promotion.

2 (Definition). **Vocational guidance** includes all systematic efforts, under private or public control, and excluding the traditional activities of the home, the conscious and chief purpose of which is to secure the most economical and effective adjustment of young people to the economic employments which they can most advantageously follow.

Examples of the various means now employed, at least occasionally, for this purpose are: (*a*) Selected readings given under the guidance of the school, with a view to conveying information as to economic activities, the qualities demanded in the various vocations, etc.; (*b*) systematic reading and study of specially prepared pamphlets descriptive of the opportunities, requirements, etc., of various particular lines of employment—usually given under the direction of teachers—(*c*) individual or group conferences of pupils with teachers, for the purpose of discussing vocational opportunities, conditions required, etc.; (*d*) systematic study of young persons from the standpoint of their physical and intellectual make-up, with a view to advising them as to lines of employment which they can most effectively enter; (*e*) “prevocational training” (see page 69), consisting of limited amounts of practical experience in connection with exercises taken from various lines of practical work, with a view to discovering the pupil’s fitness therefor, or enabling him to discover his own more fundamental aptitudes and interest; (*f*) systematic study of various economic lines of employment, with a view to obtaining specific data to be used in advising young persons seeking employment; (*g*) maintenance of employment agencies for young persons in day or evening school, with a view to assisting them to obtain work in suitable occupations.

Vocational schools in general, in more or less organized forms, offer vocational guidance and act in a measure as employment agencies in placing their graduates. This is especially true of normal schools, industrial schools, commercial schools, technological institutions, and universities.

## **Chapter IV.**

### **SOME WAYS IN WHICH VOCATIONAL EDUCATION MAY BE INTRODUCED.**

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The introduction of vocational education into any community at the present time is dependent upon certain rather clearly defined factors which are peculiar to this type of educational development. Among these are the lack of a body of preconceived notions of educational theory in this field, the recent demands of industry for trained workers, the failure of industry to be specific as to those demands, and the failure of the public schools to meet fully the needs of a large mass of pupils in the schools after the age of 14.

Experience is increasingly recognizing the fact that vocational education is a local and not a general issue. That is to say, its content and method as well as its organization must be adapted to the social, industrial, and educational conditions of the community, all of which conditions differ with localities. These conditions are obviously different in a New England textile city from those of an agricultural community. They are different also in a large city with greatly diversified industries from the conditions in a city with a single dominant industry, and different again in a community of from 10,000 to 25,000 inhabitants from those in a community which is either larger or smaller.

The above facts would therefore seem to indicate the need of a careful systematic analysis of all the conditions involved before the introduction of any system of vocational education is undertaken. Nor should such an analysis or survey be carried on by the school men alone. The close cooperation of employers and employees in the trades and vocations of the town is needed, if effective thinking and action are to result. To be more specific, it would appear that the most effective means of bringing about the additional equipment for vocational training is through the enlistment of the united interest and support of all forces working for community betterment; such as boards of trade, labor organizations, civic and educational associations, etc.

It is also clear that, in order to meet the exigencies of a changeable public opinion, such an analysis will require a democracy of interest. This will involve the inclusion of all forces of whatever nature at work in the community, if the result is to be permanently worth



while. Although it may be objected that this method is somewhat cumbersome and slower in operation, it is given emphasis here because of the well-known fact that several sincere and well-intentioned efforts have been ineffective through failure to use in a democratic way certain available sources of interest and help. It has been found, therefore, that full cooperation within the community itself may be best secured by the backing of a central board or a central committee made up of representatives appointed from the several organizations and interests which are in any way concerned. Such a committee in every case should include persons from the industries, both employer and employee, from the lay public, and from the school public.

The securing of such public interest and support requires a continuous campaign of publicity which will attract public attention sufficient to bring about a local demand for such an investigation and report. It would add materially to its value were such a report to thoroughly analyze the local situation and through constructive recommendations point out a line of action which appears to be reasonably easy of accomplishment and most likely to be effective. Such a comprehensive study might secure added strength, probably greater interest, and possibly more nearly convey the full meaning of the movement were it to be designated a "survey."

Such a survey will of necessity be quite inclusive. It should keep clearly before it the facts concerning each phase of the situation to be studied. It should be both comprehensive and detailed. It should recognize all interested parties. It should eliminate no factor, however simple, which would seem to have a bearing upon the solution of the problem. The necessity, therefore, for arousing all of the dormant forces in the community is apparent. The successful completion of the undertaking will depend quite as much upon the extent and strength of the movement as upon the actual installation of the work. For the purpose of starting in the right direction, as well as for utilizing the varied forces in the most helpful way, the following suggestions are made. They show rather clearly definite steps which may be taken to foster an interest in vocational education which may later result in a definite demand for a survey of local conditions.

1. *By preparation and distribution of publications.*—The purpose of such publications should be not only to give accurate information in convenient form, but to present favorable arguments based on local facts and needs. These might be accompanied with, or followed by, publications from outside sources and from authorities on the subject.

The support of local newspapers should be secured in the printing of press articles and editorials on the subject. Newspapers afford

one of the most effective means for creating interest in the subject and for bringing about on the part of the public an understanding of the aims and purposes involved to an extent which will seem favorable to public action and support.

2. *By meetings to create local interest.*—(a) Holding of conferences at which speakers from within the city or town may tell of needs as they see them, or speakers from out of town may be secured to tell of what other places have found out and done.

Such conferences may be in the form of luncheon or dinner meetings or they may be of greater length, at which specific questions may be taken up and discussed.

At each conference on the subject the use of lantern slides and moving pictures will serve as effective means for impressing those present with the need and possibilities of vocational education.

Slides are obtainable from many State and city departments of education and a number of reels showing vocational institutions have been made by the National Manufacturers' Association; the United Shoe Machinery Co., of Beverly, Mass.; and the National Cash Register Co., of Dayton, Ohio.

(b) Holding of exhibitions.—Conferences may often be combined with the holding of exhibitions of school work done either locally or abroad, although the combining of the two is not essential. Care should be taken that any such exhibitions be made with due regard to satisfactory display and in a form of presentation which will attract interest and tell a story which can easily be appreciated. They should be given in places easy of access or in places where the people whom it is desired to reach are likely to congregate.

It has been found to be of little value to present exhibitions that do not carry the story to people by an appeal through motion and color, as well as through the intellect.

At an industrial and commercial exposition held under the auspices of the Boston Chamber of Commerce the education committee of that chamber secured the cooperation of public and private school authorities, in planning and carrying out an unusual educational section to that exposition.

In the idea of its presentation and the scope of the work shown, the exhibit was unique, not only in being a fairly comprehensive showing of the opportunities for industrial education in Massachusetts, but especially in its presentation of these opportunities by types instead of by individual schools, the separate institutions subordinating themselves for the sake of giving to the public a clear impression of the chief methods of meeting this important problem.

In connection with this same exhibit there was issued a joint circular, presenting in a brief form the opportunities for vocational education available in Boston and vicinity; and as a further valuable result, there was brought about a joint movement among those in charge of such education to prevent unnecessary duplication and to secure the benefits which come from cooperation.

Other notable examples of the effectiveness of such exhibitions were those of the education department of the Philippine Islands and of

the Massachusetts exhibition of vocational education at the Panama Pacific Industrial Exhibition. Exhibitions offer an opportunity to distribute in an effective way literature dealing with the subject.

Publications that will be helpful in the preparation of publicity material are those issued by (a) National Society for the Promotion of Industrial Education; (b) Russell Sage Foundation; (c) Trade-unions; (d) Manufacturers' organizations; (e) State education departments; (f) The United States Government.

3. *Central committee.*—After a favorable public interest in the local situation has been awakened, the community itself will see the need of the appointment of a central committee. As previously indicated, this committee should represent a variety of interests. It should be democratic both in its composition and in its action. It should organize in the usual way, with a chairman and secretary, and possibly with subcommittees to look after specific details. Among its first duties will be a continuance of a policy of publicity in regard to community needs, community possibilities, and community limitations. A partial recognition of these needs, possibilities, and limitations should soon result in a desire on the part of the committee for a more detailed study of the local situation than can be made by any body of busy men engaged in their own occupations. This will pave the way for the appointment of a person to organize and carry forward a detailed study or survey of the exact local conditions. It will become evident that no preconceived notions of education nor prearranged plan for such a survey will actually meet the local necessity.

4. *Preliminary considerations.*—Previous to the selection of a person to carry forward such a survey certain pertinent facts should be borne in mind by the committee:

1. That whatever differences there are between the members of the group as individuals, they all must unite upon the one idea of getting at the actual facts.
2. That neither partiality nor prejudice should sway the committee to draw conclusions or make deductions until all of the facts bearing upon the situation have been presented and analyzed.
3. That local pressure and local bias for any particular plan shall be withstood, except in the light and bearing which such expressed opinion may have upon the situation, when a full knowledge of the facts has been ascertained.
4. That above all a spirit of openmindedness, cooperation, and good will shall pervade the committee in its work. With such a series of understandings carefully organized and agreed upon the committee should proceed to the selection of a competent surveyor.

5. *Surveyor*.—It is at once recognized that it will not be possible for every town or city to secure the services of a professional experienced surveyor. In many instances it will be necessary to select the best person who at the time is available for the work. In general, it may be remarked that the one who is in charge of the survey should be a man with breadth of outlook, careful judgment unbiased by prejudice of any sort, considerable initiative, organizing power, some capacity for the interpretation of the facts obtained, and a fairly wide knowledge of school, social, and industrial conditions. In short, he may well be selected with the thought that he is to become later the director of vocational education in the community in which he has made the survey.

6. *The survey*.—As yet there is lacking both sufficient experience and agreement on the part of investigators to justify the setting up of specific methods for organizing a vocational survey. There are, however, certain deductions which may be made from existing surveys which are of material assistance in the formation of plans for a specific survey. For example, it will be necessary to know something about the social, economic, industrial, and educational conditions within the given municipality. It will be left to the director of the study to interpret the data gathered and to translate them into terms of local activity or into terms which shall give to the town or city certain rather definite reasons either for establishing particular types of schools or rather more definite reasons why no vocational schools, as such, should be established.

Inasmuch as the gathering of data and their interpretation are to be centered in the one individual, the following suggestive outline has been prepared, not so much showing a complete program as pointing out a line of attack which heretofore has been found to have sufficient merit to be workable. While possibly not all of the steps indicated have been utilized in any one study, each of them may be found as a part of some individual study.

1. *Facts about the People*. (While this may be somewhat too inclusive as a major division, it is used here in the restricted sense of a single locality.)

(a) Population extent. The whole program will depend much upon the size of the community.

(b) Migration. That is to say, whether or not the population of the city is stable or movable.

(c) Conditions as to type.

(1) White or colored.

(2) Native or foreign born.

(d) Illiteracy.

2. *Economic Factors*.

(a) Tax rate, local and State; the whole tax burden.

(b) The indebtedness of the town or city.

(c) Conditions of waste in the expenditure of all public moneys.

**2. Economic Factors—Continued.**

- (d) Possibilities for effecting economies by a reorganization of the present system of education.
- (e) The amount of school funds, from whatever source, available for local use.

**3. Industrial Factors.****(a) Apprenticeship.**

- (1) How extended.
- (2) Lack produced what result.
- (3) How to supply lack.
- (4) Not needed because of type of labor employed, mature workers only, etc.

**(b) Whether there is a content of technical knowledge or skill in any job that can not be acquired through routine work and for which special instruction is needed.**

- (1) If so, what is it?
- (2) Whether it can be best imparted by provisions inside the industry.
- (3) If not, whether it is worth while to provide for such instruction through outside agencies.
- (4) If this is true, whether such instruction shall take the form of—

- (a) All-day industrial schools.
- (b) Trade schools.
- (c) Part-time industrial classes.
- (d) Evening classes.

- (5) Whether there are any jobs for which it is not desirable either to direct the youth or to train him at public expense.
- (6) What number of new workers could be prepared for any job, if it has a teachable content, without overstocking the market.
- (7) What kind of equipment as to age and physical and mental assets the workers should have for the job.
- (8) To what extent does the industry select its workers for any job so as to secure those best adapted to it.
- (9) Whether their market is overcrowded.

**4. School Factors.**

- (a) The number of children leaving school each year.
- (b) The nationality, age, and schooling condition of those withdrawing.
- (c) The economic condition of those withdrawing.
- (d) The wages, number of jobs, kinds of work, and advancement of those withdrawing.
- (e) Causes of retardation.
- (f) Causes of withdrawal.
- (g) Education after leaving school.
- (h) Means of getting a job.
- (i) Comparative amount of idleness of nongraduate, graduate, and high-school group.
- (j) The aim, character, and extent of prevocational training in the elementary schools.
- (k) The aim, character, and extent of manual training in elementary and high schools.
- (l) The aim, character, and extent of the evening schools.

## **Chapter V.**

### **METHODS OF ORGANIZATION.**

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As a result of a local survey, it is assumed that some form of vocational education should be undertaken. The particular type of such education to a considerable extent will indicate the method of organization. To avoid future complications and misunderstandings, the details of the plan should in all cases be determined so far as possible previous to the actual inauguration of the work. It should also be clear that in most of the States the local authorities will be the initiators of the work and will have the responsibility for its successful operation. In some States the central authority of the State will assist in the preliminary steps, will set standards and requirements, will approve the actual plans in advance, and will share in bearing the financial burdens.

### **STATE ADMINISTRATION.**

It will be found in most States that there are certain legislative enactments and requirements which affect the installation of vocational work. It may be found in some of the States that the State constitution itself, as well as some of the legislative enactments, while not prohibiting, may, by restrictions as to compulsory attendance, etc., practically prevent the local authorities from undertaking this work. In short, these requirements will afford an effective barrier against any form of vocational education for persons between the ages of 14 and 18 years.

At the present time in several of the States direct provision has been made for the sharing of responsibility, both educational and financial, by the State. In other States it will be found that certain State funds may be transferred or made available for this work. This may be particularly true in those States in which there is a large income from excise taxes, and the various school funds established under the act can be utilized.

The central State authority in some States will have the power to set up certain definite standards and requirements as to the qualifications of the officers and instructors who are to have charge of this

work in a given community. For example, some States have gone so far as to say that a person in charge of vocational work should be

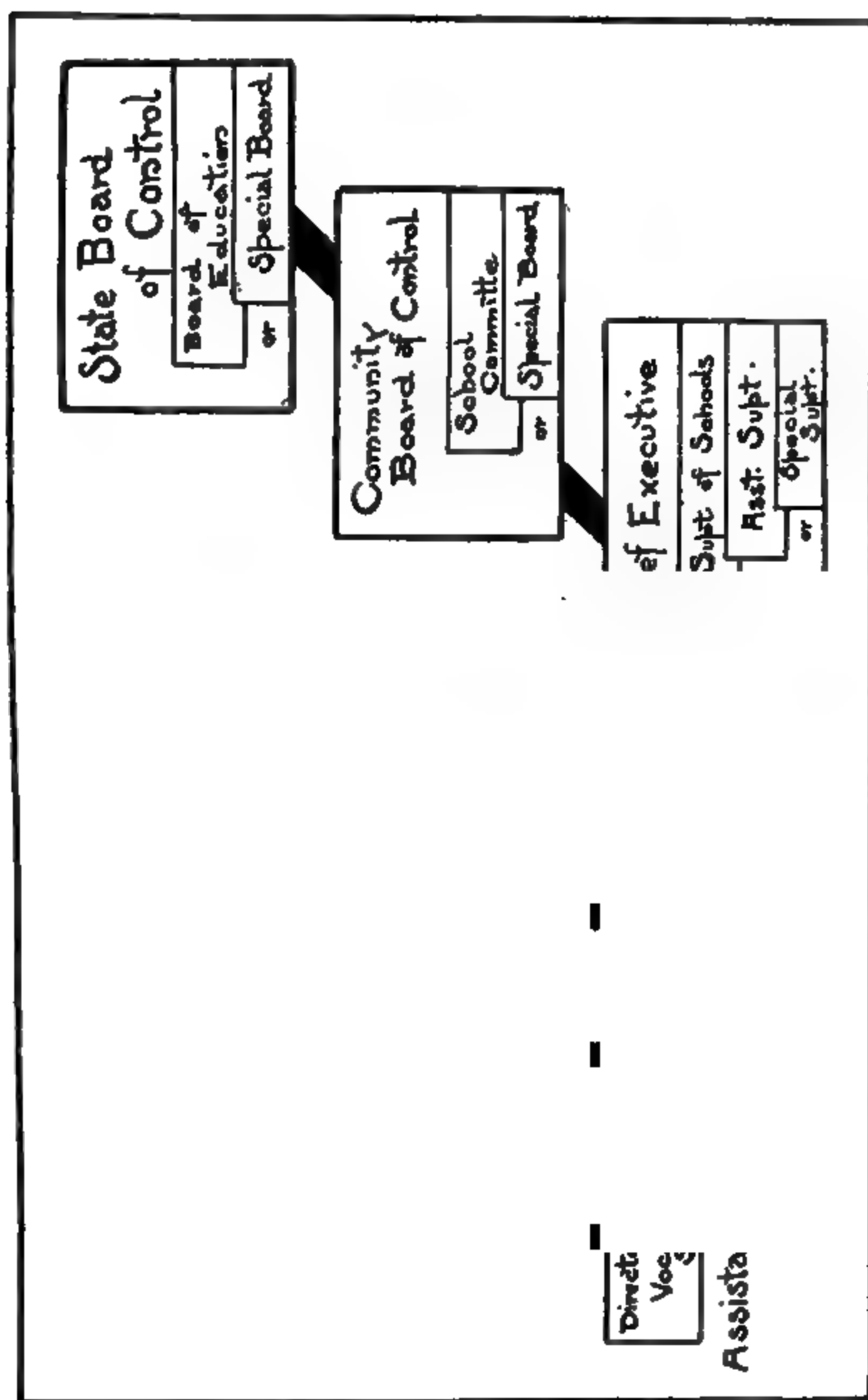


CHART I.—ORGANIZATION.

a person acquainted with the needs of the industry as well as with certain and somewhat definite educational equipment. It has been



determined also that the instructors for trade work shall be persons who have had a considerable background of actual experience in the trade which they are to teach, that the instructors who are to teach the technical studies which are related to the work shall be persons who have a considerable acquaintance with the trade or industry for which the instruction is to be given.

Again, the State may set up certain definite restrictions and requirements as to types of buildings, whether or not the work shall be carried on in a school building or factory building, in a building erected especially for the purpose, or in an old school building which has been reconstructed in such a way as to be most effective for the teaching of the trade in question. The State may even go so far as to determine the type of equipment which shall be used in each school, whether or not modern machinery shall be installed, or whether it seems more advisable to utilize machinery of a slightly earlier day for the purpose of meeting the local situation.

In some cases the State will insist upon a review and approval of the course of study to be offered before such courses of study are put in operation. In many cases this may forestall the inauguration of courses which will fail to teach the trade effectively. These courses will vary considerably in accordance with the needs of the particular industry. The person preparing the same should keep clearly in mind this objective; otherwise it will be found necessary continuously to revise and modify the courses to such an extent that it will be difficult to do satisfactory work. Another requirement which may often be established has to do with the person to whom this type of education shall be offered. That is to say, it may be offered only to persons of a certain age, from 14 to 16 years or from 14 to 30 years; it may be offered to persons with a previous grammar-school education or to persons who have completed the regular school work of the seventh grade; or it may be offered only to those persons engaged in the particular trade or in some branch of the particular industry for which the instruction is to be given. Certain other limitations may be placed upon the work by the State, such as the size of classes, length of time to be allowed each subject, length of time to be devoted to a single operation, length of time necessary for the full completion of the course. These requirements and limitations may be set up by the State for the purpose of providing standards of judgment, which may be used for approval or disapproval of the school. In many cases they will be set up as a condition for reimbursement by the State. In these cases it may be necessary for the local community to provide not alone for the pupils resident in that particular community but for nonresident pupils. In all cases, previous to the actual inauguration of the work, the local authorities should become familiar with these exact requirements and limitations set up by the



central State authority, for in this way will be avoided opportunity for misunderstandings and possible friction.

### LOCAL ADMINISTRATION.

In all probability the most effective organization for the introduction of vocational education into any community of ordinary size will be the school committee of the town or city. This school committee, of its own initiative or through the initiative of its paid executive, the superintendent, will be the most likely to become interested in providing, first, for a type of training which shall meet the needs of that group of pupils who can not or will not profit by the general education or by the various arts courses which are ordinarily offered by the regular schools; second, a type of training which shall provide rather definitely a type of education which shall enable boys and girls of these ages to meet more effectively the requirements of an industry which, for economic or other reasons, they are obliged to enter at comparatively early ages. Furthermore, it is probably true that, because of economic and strategic reasons as well as because of lack of organization and manipulation, the school board will for some time be the most acceptable means for the successful administration of this form of education.

It should not be overlooked, however, that there are certain extraneous factors which enter into the permanent progress of vocational education. The factors are so well known that extended comment is unnecessary. They may be mentioned here to serve only as a guide to what experience has proven to be one of the best ways in which to secure the full cooperation of all forces in any way interested. It is clear that a group of manufacturers or a group of workers know more as to the requirement of a given industry than do a group composed, it may be, of professional men, general business men, and in many instances of women who make up the average school board. It is necessary, then, to provide some means by which those actually engaged in the administration of this work can be assisted and to some extent at least guided and directed by those intimately acquainted with the industrial conditions of the immediate locality. Again, those who have had to do with the introduction of the work, with the conduct of the survey, and with the recommendations made therein will be in a position to give more intelligent assistance than can be afforded by a group composed of persons who are unacquainted with these details. For these reasons it is highly desirable that the survey committee be continued as an advisory board to act in conjunction with the executive officer in charge of this work. In case it appears impracticable to continue the survey committee in every case, there should be appointed an

advisory board composed of employers and employees as well as laymen. While this board will act in an advisory capacity only, it will serve as a sort of clearing house through which the executive officer can forestall difficulties as well as readjust his own action and thinking, so that the work done will more nearly meet the needs of the worker and the work.

The foregoing plan places clearly the responsibility for the conduct of vocational education. In most communities the executive officers and workers in the field should be planned somewhat after the following arrangement:

1. Chief executive officers:

- (a) Superintendent of schools.
- (b) Assistant superintendent of schools.
- (c) Special superintendent of schools in charge of vocational work.

In actual practice each of these three methods may be found. In any case they will vary with the size of the community and with the extent of the work to be done in vocational education.

2. Assistant executive officers:

- (a) Director of vocational education.
- (b) Director of men's work.
- (c) Director of women's work.
- (d) Director of homemaking.
- (e) Director of continuation schools.
- (f) Director of evening industrial schools.

Again, the necessity for these several directors will depend upon the size of the town or city and upon the number of activities to be undertaken in the particular field of vocational education. In the smaller city, in the city of one industry, as well as in the city which is to attempt to provide for only one of the types indicated, all of the duties will devolve upon one person. In some cases it will be necessary for the superintendent of schools to serve both in the capacity of supervisor and that of director. Hence, while the foregoing analysis sets up something of an ideal situation, there will no doubt be found necessary many modifications to meet the specific situation to which these principles may be applied.

3. Principals of separate buildings which have been set apart for instruction in vocational training.

As in the case of principals for schools of general education, the duties of this office may be either administrative and supervisory, or they may be a combination of these functions with those of instruction. For purposes of clearness in the differentiation of this work and general education, it would probably be better to denominate these men directors of buildings. In many instances it may be found necessary or advisable to place this work under the same roof as that

of general education. In such cases the term principal should be retained.

4. Heads of departments:

(a) In a vocational school.

(b) In a department of a vocational school.

(c) In a department for vocational education in a general secondary school.

The suggestion is made here that such persons be denominated "directors" of this or that department rather than as heads of departments. It will occur that an overlapping of function will appear to be present; nevertheless, for purposes of clarity and actual ease in understanding by the laymen, it is advisable to distinguish in a rather definite way between the heads of departments in general education and the directors of departments in vocational education.

5. Instructors:

(a) In industrial subjects—

1. Shop operations.

2. Shop practice.

(b) In special technical subjects—

1. Drawing.

2. Chemistry.

3. Physics.

(c) In academic subjects—

1. English.

2. Civics, etc.

### QUALIFICATIONS OF DIRECTORS AND INSTRUCTORS.

In the case of each of the several officers and instructors enumerated above, as previously indicated, there should be set up either by State or local requirement somewhat specific standards of attainment and qualifications. Until the work of vocational education has had a longer opportunity to crystallize, it will be necessary to use good judgment and common sense as to the administration of those standards. There are, in the main, four divisions into one of which all those who are immediately occupied in carrying on vocational education will naturally fall:

1. *Directors of schools and directors of departments.*—The principal or director of a vocational school should have had a thorough academic training and preferably experience with different lines of public-school work. He must be in sympathy with vocational education, have the vocational point of view, and sufficient technical and practical knowledge to enable him to administer the vocational work.

2. *Shop and vocational instructors.*—The shop instructor must know his trade as fully as does a skilled journeyman; and in addition must have the knowledge of the technical method in use in the trade, together with a command of its drawing, mathematics, science,

and art; he should further have a general education not less than that represented by elementary school graduation or its equivalent.

He should have some command of the technique of teaching and school administration, and he must be trained in the application of principles of teaching to industrial-school problems. He should have a background of educational principles, theory, and practice which will help him to understand the aim and place of his own work, and to interpret the social use of the school in which he serves. He must have the ability to make his own work serve the ends for which industrial schools are established, i. e., to fit boys and men for skilled workmanship and intelligent citizenship. He should have, or acquire, a grasp on the economic, social, industrial, and educational history and evolution that have led up to the movement for industrial education in our day.

The shop instructor's personal appearance, manner, and dress must be such as will not be a handicap to him as a leader of boys. He must use judgment and discretion in all matters relating to neatness and cleanliness in person and dress.

His personal qualifications must be such as to establish a presumption that he can perform the duties he undertakes. Consideration must be given to health, strength, and temperament, as shown by his ability to get along with people and his interest in community activities. He should be not less than 25 nor more than 40 years old at the time of entering the work. His habits must be such as will not bring him into disrepute in the school or community, or set a bad example for the students. He should show ability to deal with boys; and successful experience and interest in them and their sports are assets as a teacher. His manner of dealing with boys must, of necessity, be different from that which prevails in a strictly commercial shop.

*3. Teachers and instructors of related subjects.*—The ideal teacher of related subjects whom, admittedly, in practice it would be difficult to secure in large numbers, should have *trade* equipment, teaching equipment, and personal equipment equal to that set forth above for the shop instructor. In addition, he should have had as a minimum in academic instruction not less than that indicated by high-school graduation or its equivalent. He should show evidence of ability to teach the special subjects for which he offers his services by preparation of not less than two years beyond the highest grade he is required to teach. The ability to apply these subjects in a practical way to trade problems is also essential.

A man with trade experience equal to that desired for the shop instructor is best equipped to serve as a teacher of related subjects, but if such a teacher is not available, great care should be taken to obtain such experience or familiarity with the processes of the trade

as will equip him to teach his subjects so as to prepare a boy to use them in accordance with the best practice of the trade. The character and extent of the experience that would justify the presumption of ability to teach related subjects will vary for different trades, and can only be determined for any given trade by the judgment of those who have themselves had successful experience in it.

4. *Teachers of nonvocational subjects.*—The teacher of nonvocational subjects in an industrial school enters a field where few precedents exist. The practical character of the trade work creates an atmosphere which demands a concrete and practical presentation of the nonvocational subjects such as is not common in our traditional schools. A teacher can not expect to teach boys in these schools the same subject matter or by exactly the same methods pursued in high schools. He has a special field, and, to a large extent, unexplored territory. He must take the boys who come to him and so organize the subject matter as to make it an effective supplement to the other work of the school, and so far as possible to function in the life of the pupil.

His teaching equipment, personal equipment, and general schooling should not be less than are demanded for the teacher of related subjects mentioned above. In his special field he needs, perhaps, not more knowledge, but knowledge of a different quality and the ability to organize it. He should have an appreciation of the conditions and problems of modern industry such as can be expected of an intelligent layman, and a knowledge of the more common machines and trade processes carried on in the schools. A man with some natural mechanical ability, even from an amateur standpoint, is more likely to succeed in such work than one whose interests are entirely academic.

Experience as a wage earner is an asset, as it enables one to gain a sympathetic insight into the needs of the worker, to understand the aims and purposes of the industrial school and its responsibility for the pupil and to the industry; and to see clearly the relation of his own subjects to those of his fellow teachers, and the place and bearing of his service on the total service which the school undertakes to render to the pupil and to the industries.

Such a teacher must be able to use material drawn from the world of work in teaching such subjects as civics, economics, industrial history, and English. His work must interrelate with the affairs of the industry and the activities of the school, and on no account should be taught as something remote from the pupil's life and experience. His greatest effort should be to make his teaching of civics and economics develop principles that will enable the pupil as a wage earner to solve successfully his problems as a worker in industry and as an intelligent citizen.

### PUPILS.

It has been found by experience that for most purposes the pupils in a school for vocational education should not be less than 14 years of age; that in day classes they should not be more than 25; and that in evening classes the lowest age of admission should be 16 years, with almost no limit beyond the requirement of the industry as to the maximum age limit. The qualifications of the pupils will vary with the needs of the industry. In general, however, they should be persons who have completed the seventh grade of the general school and who show that they are competent to profit by the instruction sought. In the part-time schools, in which approximately one-half time is given to instruction and one-half to the work, and in the evening classes they should in most cases be employed in the same industry as that in which they are being taught specific things concerning the allied trade or industry. The most marked exception to the above condition will be that in the case of "homemaking" for girls and women over 17 years of age.

### SIZE OF CLASSES.

Actual practice has fairly established 15 as the most desirable group with which to work to advantage. As in so much of this work, the number of pupils in a given case must depend largely upon local conditions, upon the complications of the trade, upon uniformity or lack of uniformity of intelligence in the group to be taught, and upon the care with which the shop instruction is organized.

### FACILITIES.

In general the location and construction of the buildings and the type and extent of the equipment should bear a direct relation to the needs of the pupil, to the needs of the industries for which training is to be provided, to the material prosperity or wealth of the community, and to the importance in which this work is regarded by the citizens.

In any specific case it is obvious that, in so far as possible, the location should be such as to convenience the majority of the pupils who are likely to attend. It should be located also with some regard to the industry, and with due consideration for lighting both day and evening. In actual practice the following provisions have been made for housing this special type of education:

1. The special school erected and fully equipped for this purpose. The best examples of such schools are the private schools, Williamson Trade School, at Philadelphia; the Wentworth Institute, at Boston; and the John S. Rankin, Jr., School, at St. Louis.



The Trade School for Boys, at Worcester, and the Milwaukee Trade School for Boys are examples of public schools devoted entirely to vocational work.

2. The old factory building remodeled. The chief objections to this adaptation will be improper location, inefficient lighting, and inadequate heating. It will have the advantages of adequate floor space, an atmosphere of reality, possibilities for rearrangement and additions and alterations. In some cases these latter may furnish excellent opportunity for constructive work by the pupils. Good examples of this type are the schools at New Bedford and Springfield, Mass., and the industrial school at Rochester, N. Y.

3. The abandoned schoolhouse remodeled as a shop. The chief advantages for this use of an old schoolhouse are the ease of accomplishment, especially during the experimental stages, the probable lessened cost and the creation of favorable public sentiment. Its disadvantages, like those of the old factory, may be location, improper lighting, with the added difficulties of construction, size and shape of rooms, and its appeal to the pupils. It isn't shop enough. Newton, Lowell, and Somerville, Mass., have each adopted this plan.

4. The utilization of a room or rooms in a regular secondary school building, which rooms have been fitted up for this purpose. This plan will be best adapted to the small community and to the community with limited financial resources. It should be clearly understood, however, that this work is conducted upon an entirely different basis from that of the regular high school, that it is proposed to reach a group who have not been prepared for the general secondary education offered in the general school. The requirements for the teachers should be those set up in a preceding section of this chapter, other than those for the general school. In short, the line of demarkation should be sufficiently distinct to make it clear that the pupils in this department are learning to do specific things which will enable them to earn a better living when they finish their training.

#### EQUIPMENT.

It is an unfortunate thing for an industrial school to have a complete building and equipment turned over to it at the outset. If the pupil is to be adjusted to meet the demands of the industry, his training must be real. If it is real, it must be given in a productive shop, making useful things that can be utilized in the school system or sold on the open market at or above the market price. Schools giving training in such subjects as woodworking, metalworking, electrical working, can readily find use for the work of the pupils either in

the building itself or in the school system. Every school should make a part of its own equipment. This has been done by most of the industrial and trade schools. Enough equipment ought to be bought at the outset to start the work. Sometimes an equipment sufficient to give the first year's training is bought, after which the pupils are able to make most at least of the tools and machines and facilities necessary for their further training in the following years.

Where schools find themselves with limited resources at the start, much secondhand equipment for use in the first year of the work at least, can be bought that will serve its purpose well. In the other years of the course, it is necessary to secure the very latest and best machinery, so that when the boy leaves the school he will be familiar with it and can take his place in the shop successfully.

One of the handicaps under which the school shop must always labor is that of keeping its machinery from time to time fully abreast of the best equipment of the commercial shop. It is doubtful whether this can be done altogether successfully. Under the stress of competition, the commercial shop changes its equipment from time to time. The school without such competition is very likely to remain content with machinery that is behind the times. This is one of the strongest reasons why the part-time scheme of education that enables a boy to get the most of his practical training in the industry itself promises to be most effective in dealing with the great body of wage-earners between 14 and 18 years of age.

Many enthusiastic supporters of part-time education have been led to claim that all the equipment the school needs in dealing with the wage-earner for the time which it demands away from the shopwork is a teacher, a textbook, a blackboard, and some desks. In their enthusiasm they fail to recognize the conditions under which most of those who are employed in the industries labor. Large scale production, extreme division of labor, and the specialized machine have supplanted the artisan or tradesman with the machine-worker. The old trades in which men were able to get experience with all the different tools, machines, and processes of their callings are rapidly disappearing. Modern industry does not give the worker a chance to get a broad experience in working with different machines. The typical boy who comes to the part-time school will be one who is spending his entire time at one machine, making one small part or portion of the final output of the factory.

The schools must always take the boy as it finds him and give to him the training he needs. In giving part-time instruction to the worker at the specialized machine, the school must provide under the school roof, if it is to meet modern industrial conditions, a sufficient amount of equipment to enable the boy to get the elementary practice and experience at the machines, with the tools and in the



process which the shop denies him and which is necessary to his insight, interest, and growth in the occupation. Every experience goes to show that a minimum amount of equipment under the school roof is necessary as a teaching device which will make it possible for the teacher to closely correlate or connect the instruction which he is giving with the shop processes as they can be illustrated on the machines.

One great mistake which many manual-training and technical high schools have made, and which industrial schools are in danger of making, is that of providing a large number of tools and machines of one kind rather than a smaller number of different tools and machines. There are manual-training and technical high schools in this country where in order to carry on the teaching of pupils in groups enough metal lathes have been secured to provide one for each pupil in the largest section which the school handles. This policy requires both an enormous building with many different shop rooms and a large outlay of money for equipment for the work, much of which is unnecessary and dooms the school forever to a system of training where the pupil is taught by the exercise rather than the job method, where individual instruction has no place, and where the pupils are handled entirely in groups. The same amount of money put into a more varied equipment would enable the school, whether it be a manual-training school or industrial or trade school, to deal with the pupils individually so as to give each a wider range of experience with different machines, substitute the individual for the group method of instruction, and to approach more nearly the conditions of real shopwork so necessary in the proper training for success in the industries.

### KINDS OF SCHOOLS.

Any adequate program of vocational education must provide instruction both for those who desire preparation for a calling before entering it and for those whose advancement depends upon additional training of some kind after they are employed. In either case the instruction in one or more of the three forms of education—industrial, agricultural, and homemaking—may be given.

Schools planned for these two groups may be generally classified under three heads:

I. The all-day school, where the pupil devotes the entire school day to instruction.

II. The part-time or continuation school, where the pupil having already gone to work devotes a part of the working time for further education.

III. The evening school, where mature workers attend evening classes, receiving instruction supplementary to their day employment.

## I. THE ALL-DAY INDUSTRIAL SCHOOL.

The survey will undoubtedly show the presence of a body of children who have left school at the age of 14 (or younger where the law permits), many of whom have not finished the elementary school. Because of their limited education, their lack of skill, and their immaturity, they will probably be found engaged in a variety of odd jobs, shifting about from one occupation to another, with little or no opportunity to advance in either skill or earning capacity beyond that which brings a meager subsistence.

It would appear, therefore, that for this group, who are likely to enter industry early, there is needed a school or courses which will minister to their vocational as well as their civic needs. While the all-day industrial school can seldom teach a trade in the fullest sense of the term, there is a fund of experience which shows that it can do much to prepare girls and boys over 14 years of age for entrance into the trades.

In these schools a close relation must be maintained between theory and practice. Practical shopwork must be supplemented by related studies in English, civics, industrial history and geography, and elementary mathematics, as well as by the science and mathematics underlying the trades. In this way the school will make for intelligent citizenship as well as for superior workmanship in the years to come. Shop conditions must be approached as nearly as possible in the school, and in general the following conditions should be met in the school:

1. Not less than one-half the time of the pupil should be given to actual shopwork, including such calculations and shop drawing as may be necessary to bring the projects of the pupils in the shop to successful completion.

2. The shopwork must be conducted on a productive or commercial basis as distinguished from the ordinary manual-training method of handling pupils in the shop.

3. The instruction must tend to become individual as distinguished from group or class instruction.

4. The shopwork must be carried on as nearly like the work done in a first-class commercial shop as conditions will permit.

5. The results of the pupils' work should be useful articles which can be utilized in the school system or have a market value.

6. The assignment of work to a pupil in the shop should be by projects or jobs.

7. The progress of the pupil through the shop and school should be measured by the projects or jobs which he has completed in a satisfactory manner.

8. The classroom instruction in the related academic subjects, such as arithmetic, drawing, and science, should be closely connected at every possible point with his shoproom experience in order that it may be of immediate practical value to the pupil.

9. Every day industrial school should plan for at least a one year's course and for not more than a four years' course.

10. Every year's work should, so far as possible, be a unit unto itself. Each year's work should be organized and administered in a way that would confer upon the pupil a definite value in vocational training, so that if he should leave the school at the end of the year the instruction could be used by him as a tool in trade for better wage earning.

11. Not less than three (60-minute) hours should be devoted each day to actual shopwork. The school session should not be less than six nor more than eight hours, not counting the recess and noon periods.

12. So far as feasible, instruction should be given in English, history, civics, and other appropriate subjects which would tend to make the pupils self-helpful, intelligent, and worthy citizens. The end of the vocational school should not be merely to produce a technically competent workman, but a *citizen of the State* who seeks not only to advance his own welfare through his work, but who is ready and willing to place his efforts at the service of his community and State.

## II. THE PART-TIME OR CONTINUATION SCHOOL.

A second group to be considered in providing vocational training opportunities is that made up of young people who have left school before completing their elementary education and who are therefore handicapped by lack of schooling either for successful wage earning or for intelligent citizenship. These young people are neither prepared to choose a vocation intelligently nor to follow it with sufficient prospect of future advancement, because the schools have assumed no responsibility for their preparation for employment before they must become wage earners. Under present social and economic conditions it is probable that the all-day industrial school, when developed to the full, will not reach more than a meager percentage of the youth. By far the largest number must be reached by the part-time schools, which will take a part of the working time of young persons between 14 and 18 years of age for continued education, either along the line of a chosen vocation or of general civic intelligence.

While, therefore, it is important to provide for preparatory vocational training for every boy and girl who can afford to spend even a year or two in school, beyond that which is required by law, it is more

important to provide for that great mass of children whose education is at present terminated by entrance to a "job," and whose only prospect for further education is dependent upon its not being divorced from the possibility of wage earning at the same time.

It is also true that to a large extent the schools have abandoned the adolescent wage earner entirely to the shop and the factory and have taken no further responsibility or care for his preparation or guidance, just at the time in his life when he most needs discipline, instruction, and the direction of his newly awakened social, civic, and industrial interests.

Very little, if any, of the work which he is doing is of a character which will permit of directly related teaching, so far as strictly industrial subjects are concerned. The industrial experience which he is probably getting in daily employment is frequently such as to enable him to profit greatly by subjects which, while not definitely connected with his particular job, would nevertheless lead to greater industrial intelligence and greater surety of future success as a trade worker.

Also there are many who believe that, while all-day industrial schools can give general industrial intelligence and helpful preliminary training for entrance to a trade, and that real trade preparation may be given to a limited few over 16 years of age in special trade schools, the understanding of the technical and theoretical part of a trade can in general be mastered only by those who are already engaged in actual practice in that trade. Clearly, therefore, one of the best ways that a small industrial community can provide vocational education is by the part-time plan. This provides for an equitable distribution of the responsibility for vocational education between the shop in which the pupils are employed and the school providing a few hours of instruction each week designed to make the young workers more efficient workmen and better citizens. The two large purposes of part-time instruction may be stated as follows:

1. To increase the general intelligence of young workers and lead them to understand better their social and civic duties.

2. To increase their industrial intelligence and skill and develop capacity for advancement within a given trade where such opportunity exists, or where it does not to prepare for some skilled and remunerative work in another line.

Such instruction will have in mind to provide, among other things:

1. Trade extension for the "next step up" within a given industry.

2. Trade preparation courses for boys and girls employed in juvenile occupations, in order that they may enter other and more favorable occupations when they are older.

3. General improvement courses for those employed in occupations where advancement is dependent upon increased civic and general intelligence.

4. Home economics courses for girls who are employed in any line of industry.

It is clear from the above considerations that part-time education will be of two distinct types, according to the amount of time per week given to school instruction:

First, the strictly part-time vocational school in which approximately one-half of the pupils' time is set apart for the school and one-half in some trade or part of a trade in a shop for which compensation is received.

Second, the part-time school of the continuation type, which is for the purpose of permitting the boy (or girl) for a few hours each week an opportunity to continue his education beyond what was possible under previous conditions because of economic pressure or other reasons.

It follows as a matter of course that the amount and kind of instruction that may be given in a part-time class may vary greatly. As to time devoted to the work, five or more hours may be given to the instruction per week, a day a week, or the half-time plan may be adopted, whereby alternate weeks may be given to the school and shop or farm. Whether the half-time plan or less than half-time plan should be used will depend, of course, upon the facilities which the school has for handling the classes, the amount of cooperation that can be secured from the employers concerned, the class of individuals to be served, etc.

#### DIFFERENT PLANS FOR PART-TIME WORK.

The following types of part-time instruction are at present being carried on in this country, or have been proposed as practicable schemes for part-time vocational work:

(1) Plans classified according to responsibility of employer.

(a) *The No-responsibility Scheme*, in which the employer does nothing more than to organize the factory or plant so that the pupils may have time off from the shop or factory during working hours to attend the school.

(b) *The Part-responsibility Scheme*, wherein the employer, in addition to making arrangements so as to afford time off for the school, pays the pupil for all or a part of the time spent in the school, i. e., pays for half or all the time lost from the business.

(c) *The Full-responsibility Scheme* prevails when the employer, in addition to arranging his work so as to cooperate with the school, agrees with the school authorities to give the young workers an opportunity to secure the round of experiences at the different machines and processes in the shop which will give them breadth of skill and insight as workmen and enable them to get the necessary instruction to learn the trade in the school. In most cases the learners are paid for the time they spend in the school. This plan is most often used in connection with the more important skilled industries.

(2) Plans classified according to time given to shop and school.

(a) *The Week-about or Half-time Plan*, in which alternate weeks are given to the shop and school. This is sometimes called the two-boy plan, because it is customary to assign two boys to the same task, one working in the shop while the other goes to school and then exchanging places the next week.

(b) *The Less than Half-time Plan*: This includes all plans which give less than alternate weeks to vocational instruction. The work may be arranged so that the learner has eight hours each week at the school, in some cases five hours a week, in still others from two to four hours. It may readily be seen that decreasing the number of hours given to the school decreases the difficulty of securing additional help, but increases the difficulty of organizing the work at the factory so as to permit the shifting of the workers in a manner necessary to permit them to attend classes.

(3) Plans classified according to enforcement.

(a) *Voluntary Part-time Schooling* contents itself with providing a school to give the vocational work and persuading employers, parents, and children to cooperate with the school authorities. Sometimes the employer arranges with the school authorities to have some or all of their young workers take the training by making attendance upon the school a condition for their employment.

(b) *Compulsory Part-time Schooling* occurs when the youth who has gone to work is compelled by law to give a part of his time to the school, and where the employer is required to arrange for time off for the class in order that the child may attend the school. This is the better plan and is the one provided for by the Indiana law.

In the introduction of this work the administrator or director should keep constantly in mind his objective. That is to say, his school or schools should be so organized as—

1. To meet the needs of the specific group of workers which have been found as a result of the survey.

2. To add to the technical knowledge and skill of the workers.

3. To make the instruction efficient.

4. To justify the expenditure of money for its support by the amount of time given to the work and by the amount of benefit derived from such work by the pupil.

5. To select for the school instruction data taken directly from practice of up-to-date industrial establishments.

6. To include at least one study in the course which deals directly with training for citizenship.

### III. THE EVENING SCHOOL.

Whereas the part-time school has for its particular province the training of the boy and girl between 14 and 18, the evening school is the only possible means of benefiting the more mature workers who are ambitious to advance themselves. The majority of the workers who are employed in trades must be reached by evening schools, if at all.



Young people often neglect their opportunities. The desire for wages, pure indifference, and other causes induce many to go to work before they receive the advantages of an industrial education, even when it is offered, and to neglect, in many instances, the advantages of part-time schooling unless this is made compulsory by the States. The awakening which often comes after these chances are past leaves the evening school as the sole remaining hope.

So far as evening work for men, at least, is concerned, it is probable that the best immediate returns in increased economic efficiency from industrial or trade training come from instruction in the evening classes attended by adult workers. They have been in the shop long enough to realize their lack of preparation and its practical value; they have acquired sufficient skill and insight into mechanical processes to know what they need and come to the evening class determined to get it. The instruction, when given by a teacher who is himself familiar with the trade, can be made to appeal at every step to the interest and the previous knowledge and experience of the student.

At the present time the need for evening industrial and trade schools is probably at its greatest in this country. It will be used to bridge over the chasm which has resulted from the lack of industrial education in the past. While there will always be a place for the evening school to give many workers the training they need as the next step forward in their callings, a system of all-day and part-time industrial schools will greatly lessen this need. In Germany, as the result of 30 years of progress, they have been largely replaced by continuation schools, which are more and more becoming day schools. "The evening school may be an imperfect and temporary agency, but it is nevertheless the only agency to do a large part of the work which needs to be done."

The time available for vocational instruction in evening classes is so limited that it is impossible to teach both the theory and practice of a complete trade in an evening school. For this and other reasons it has been found by practical experience that productive wage earning can best be reached by a type of instruction which will give the learner help in solving the actual problems he meets in his daily work—courses which will help him forward a step at a time, as it were, in his mastery of that occupation. In giving instruction in evening classes to farmers, for example, such problems as the following might be taken up: Marketing farm products, selecting seed corn, keeping poultry, how to grow tomatoes, etc.

Experience has demonstrated that such short unit courses arranged to meet the specific and immediate needs of the workers provide the best means of giving the needed help. Such courses make it possible for a worker to come into the evening class, take one or more



courses and withdraw without interfering with the organization of the school. The work becomes more individual and interesting. Such unit courses may be 1 hour, 10 hours, or 50 hours in length. The following examples from representative occupations and trades will make clear what is meant:

*Carpenters' Trade—*

Blue-print reading for carpenters.  
Free-hand drawing for carpenters.  
House framing.  
Roof framing.  
Stair building.  
Shop arithmetic for carpenters.

*Machinists' Trade—*

Blue-print reading for machinists.  
Free-hand drawing for machinists.  
Automobile repairing.  
Bench lathe work.  
Tool making.  
Shop arithmetic for machinists.  
Forging.

*Unit Courses in Cooking—*

Bread making.  
Cake making.  
Simple family meals.  
Left overs.  
Lunches for the dinner pail.  
Feeding of children.  
Marketing.

*Unit Courses in Homemaking—*

Serving of meals.  
Home nursing.  
Care of children.  
Washing and ironing.

*Millinery—*

Wire framing.  
Hat trimming.  
Velvet hats.

In contrast to the short unit course is the "long-term single-subject course," which is the course by which subjects have generally been presented in evening schools.

The long-term courses are primarily for those who know with a fair degree of accuracy what they want; for those who are not likely to become discouraged by a too early announcement of the length of time that will be required to reach the goal that they seek; and for those who have sufficient faith in what the school can do for them to make them willing to pay the price in sacrifice of both time and effort that is necessary to obtain the needed training.

These courses may follow a single subject or a single line of work over a considerable period with a large group of students; or they may start with the large group of men and later differentiate the work into several subdivisions with smaller groups. The work, too, may be so arranged as to permit students here and there throughout the course to supplement it with related study selected from other courses. The distinguishing feature of this course is its continuity for the individual student, and its successful operation is confined almost wholly to very large cities.

On the whole, short unit courses will be found to be the more satisfactory, permitting, as they do, greater flexibility of instruction, better adaptation to individual needs, and a variety of combination that will more nearly meet each student's individual requirements.

The establishment of any school or class giving preparation for any trade raises the question of the relation of the institution to the trade as a training center.

Inasmuch as any plans for vocational secondary education in a town or city must adjust themselves to present-day conditions in the industries, it is necessary to consider not only the processes and demands of the trades and occupations upon the worker, but also the attitude of both employers and employees in the trades as to the kinds of training needed, the ways in which the training can best be given, and what arrangements the employers, employees, and the schools shall agree upon as to the following:

1. The conditions under which new workers are to be trained and received into the trade or occupation.

2. The credit toward the period of apprenticeship to be given any course of training in the schools either before or after employment.

3. The training in schools as well as shops to be required of the apprentice after employment.

4. The preference given to local and trained workers in hiring and promoting in the trade or occupation.

In order to guard against misunderstandings and in order to prevent future complications and difficulties, it will in many instances be necessary to prepare a written bill of particulars which determine somewhat in detail the conditions under which the three most interested parties are willing to cooperate in carrying on the work of vocational education.

These particulars may make provision for such questions as—

1. The length of the probation period during which the pupil shall be tested out for determining his fitness to go on and complete the training necessary for entrance to the trade which he has selected.

2. The wages to be paid—

- (a) During the period of part-time training.

- (b) At the entrance into the industry on full time.

- (c) Graduated scale of increase in wages up to time of acceptance as a full-fledged journeyman.

3. Deferred presentation of the diploma for a period after leaving the school and entrance into the industry to be dependent upon proof of satisfactory work.

4. Preferential employment to be extended to those who have attended day or evening classes for training the worker in trade subjects.

5. Length of time and content to be covered by the instruction in the school.

6. Possibilities and arrangements for instruction during dull-season periods.

7. Arrangements to be made by the trades for encouraging attendance upon evening trade-extension classes.

8. Any other matters which may be pertinent to the local situation.

## Chapter VI.

### METHODS OF GATHERING DATA ABOUT INDUSTRY AND INDUSTRIAL WORKERS.

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In the recent past we have had a large number of industrial surveys or investigations the purpose of which has been to reveal in a very definite way, and susceptible to interpretation in educational terms, the value of instruction for those who are to enter upon industrial careers, or for workers who have already entered the industries.

The determination of many of our large industrial communities to take an inventory of their natural resources (meaning their aristocracy of brains) has disclosed the fact that the stock we had believed inexhaustible is somewhat depleted. It is believed that in the past Providence has been kind to us, but in the future Providence is likely to leave us a little more to our own intelligence, and henceforth we must sell more brains and less material.

An immediate determination to pursue the policy of our most successful competitor for industrial and commercial supremacy appears to be agreed upon, and likewise that the same end must be attained by the same means—that is, by industrial education.

It is apparent that there is no limit to the possibilities of human helpfulness that could be realized by the establishment of properly equipped and managed industrial schools. They would become the medium of communication and the promoters of cooperation between the commercial and industrial world and the school.

It is easy to understand why it is not a good thing for a community to have large numbers of boys and girls seeking employment while a reasonable minimum of education is still unattained, or entering upon life careers still too young to be aware of their own possibilities.

Just now we have one of the recurrent periods where the world is filled with reform, generally of the most attractive kind, which aims at making some one other than ourselves virtuous by certain due processes. There is all about us a widespread desire to elevate the moral or material condition of others. At the present moment it is industrial efficiency. All such propositions we must welcome for purposes of study. We must look upon them with attention and examine them, not merely in the roseate glow of enthusiastic hope, but

by the cold, clear light of the past, before we decide that they are fit for the ordeal of the future and will prove a benefit to mankind.

We must, to the utmost degree, develop our human efficiencies, but keep in mind always that social values are of greater importance than the productivity of units of trade. Devices for purposes of exploitation of the workers, reducing costs, and increasing output can not and will not be accepted as creators of social efficiency.

Vocational schools must undoubtedly yield, to a certain extent, to the demand for more specific preparation for the work of the world. On the other hand, it is equally certain that business and industry must yield to the demand for better adjustments to the physical, intellectual, and moral needs of the workers.

The chief difficulty in the recent past to the establishment of industrial schools has been (1) the lack of data regarding occupations and (2) the lack of that intimate relationship of cooperation between the shop and school so necessary to insure success. This intimacy of relationship must be permanently established and maintained if progressive efficiency is to be the goal.

Industrial education in any community, if it is to be efficient, must be at least as progressive as are the industries of that community, but the school authorities ought not to remain content to follow the industrial development of the community. Industrial education should not be content to follow, it should aim to direct industrial development. The data of industrial education include not only the data relating to the shops located in the community, and to the employments and processes of those shops, but include in addition data relating to the industry, data, that is to say, which are national and international in scope.

#### KIND OF FACTS TO BE GATHERED.

A systematic inquiry regarding occupations and processes in those industries which are established in the community, and with reference to which industrial courses in the public schools are organized, must be made in order that courses may be developed in conformity with the best practice in the industry.

The industrial character of a community is determined by a process of selective evolution. Industries develop in any community in competition with other communities largely in proportion as the environment is favorable for development. This selective evolution may be a blind natural process, dependent upon unenlightened effort, or it may be the result of enlightened and directed effort. In either case the industrial character of the community will be unique and peculiar to that community. This does not, of course, mean that all of the occupations and industries of the community will

differ materially from the occupations and industries of other communities. It means that the degree of development of each industry will be determined by local conditions. It will certainly be determined in part by accident. Industries may develop in a community by virtue of the momentum of development in the past. An industry happens to be initiated in a community, and, simply by virtue of the fact it has been established, it develops unless there are unfavorable local conditions.

The important consideration is that the degree of development of the industries established, as is the case in every large city, whether determined by accident or by natural economic conditions, is unique and peculiar. Since it is unique and peculiar, the educational needs of a community can not be determined in any other way than by a survey which is organized to determine for that community precisely what is its own peculiar industrial character, and especially to determine in what respect its industrial character differs from that of other communities. The final object, therefore, is to define precisely the industrial character, to emphasize especially the qualities of industrial conditions, and to provide a basis for making industrial education in the community as unique and peculiar as is the industry itself.

#### PRESENT INDUSTRIAL INEFFICIENCY.

Our present processes are inefficient and wasteful, and we suffer great loss from incomplete production, due to want of skill. We pay little or no attention to the human element in industry, and much less to the experimentation for correct standards. Men are assigned to this machine or that machine, to one process or another, and left to toil without any well-defined notion of how the volume of their output will balance with the output of other men operating other machines or engaged in other processes. There is little information at hand to indicate whether individual workmen are efficient or whether they are performing their tasks by the shortest possible cuts. Training for industrial efficiency, if it is realized that the human element must be considered, will make of every worker grounded in the science of industrial processes an experimenter for improved methods. It offers an opportunity for research into industrial processes that will make every worker a research student, instead of a devitalized and deenergized automaton.

One purpose of industrial education should be to teach the best usage and practice, as well as processes in the industry; in a word, to teach the industry to the community as well as to the youth who are to enter the industry. When an industry is following obsolete methods the purpose of industrial education should be to be aggressive in establishing modern methods and the most approved shop

practice, both as regards manufacturing processes, the organization of the working force, and the division of labor.

The present needs of industry, viewed from their economic aspects only, may be summarized in part as follows:

1. A greater investment of labor power and skill in the finished product.

2. A readjustment of relationship between employers and employees, which involves a cooperative effort by employers and employees for productive efficiency.

3. Relief of the workers from the deadening monotony of employment.

4. An educational system that will develop initiative, independence, imagination, and self-reliance.

#### AIM OF SURVEY.

The aim of any survey in part must be:

1. To prove the necessity of a knowledge of industrial and school conditions in the making of a program for industrial education in a municipality.

2. To show the kind of facts about industry and about the schools which need to be gathered.

3. To develop a proper method for studying the industries and the schools for the purposes of industrial education.

4. To give publicity to a knowledge of industrial and school facts and conditions which must be considered in the economic development of a permanent and constructive program of industrial education.

Since vocational education is a local issue, it must be adapted in its contents and method, as well as in its organization and administration, to the social, industrial, and educational conditions of the community.

Assuming that it is the business of the community to educate and equip for life all the youth of the city, it is also the business of the city to insure scientific guidance into useful vocations. It is just as important to assure the proper application of the training, through fitting the individual to the right occupation, as it is to provide the training itself. The public conscience is being awakened, and it will no longer do to leave boys and girls to the vicissitudes and moral dangers of chance employment, to the certain disappointment of a job without a future, or the handicap of exploitation by private enterprise. It is apparent that education and training, unsupplemented by opportunity for employment which assures the proper utilization of the training, is a tremendous economic waste.



### SCOPE.

The scope of an industrial survey in order to be complete must include an analysis of the major portion of the mechanical and manufacturing industries, the building trades, transportation, heat, light, and power transmission.

### METHODS.

A comprehensible survey must be the work of professionals, not of amateurs. It may be laid down as a fundamental principle that the successful achievement of any survey is conditional upon professional service. The preparation of schedules, the gathering of data, the tabulation work, and the final editing and organizing of the material for the report require professional service.

The work is of a special character, requiring a special sort of training and experience. Efficiency as a survey investigator is not primarily a matter of natural ability. It may be freely admitted that in any community there are connected with the public schools a sufficient number of men and women entirely competent, so far as regards natural ability to make a survey, but it is highly improbable that there should be available in any community a group of men and women possessed of the special training and experience required by survey work. In the nature of the case no community can maintain a group of survey experts, since no community has yet adopted the policy of making a survey at frequent intervals.

In this connection, however, it may be noted that something in the nature of a permanent survey organization should be maintained by every industrial community, and one purpose of every initial general survey should be to develop a local organization for the maintenance of a permanent survey.

The objects of such a permanent survey are obvious. They are: First, to extend investigations to industries not covered by the initial survey; second, to gather regularly each year, by a systematic inquiry, data regarding new processes and occupations instituted within those industries which are established in the community, and with reference to which industrial courses in the public schools are organized; third, to gather data regarding the development of new industries in the community; fourth, to maintain intimate relationship of cooperation between the shop and the school.

This intimacy of relationship can not be permanently established by one general survey made at any given time, or even by a succession of general surveys made at more or less infrequent intervals. It can be maintained only by a permanent local organization, which shall be constantly employed in gathering new data in the shop.



## SCHEDULES.

The information concerning trade groups and occupations is secured through two types of schedules: (1) The establishment schedule and (2) the individual schedule.

(1) The establishment schedule, secured from employers, covers the following important points:

- Products of the different establishments.
- Busy and slack seasons in the industries.
- Difficulties in securing competent workers in specific occupations, with reasons.
- Period of minimum productivity in various occupations.
- Years of experience necessary to reach minimum wage.
- Probable increase and decrease in demand for workers.
- Relative demand and supply for skilled and unskilled labor.
- Frequency and line of promotion from occupation to occupation.
- Shifting of workers from process to process to give wider experience and training.
- Opportunities for untrained beginners in specific occupations.
- Relative efficiency of foreign and domestic trained workers.
- Relative instability of employment of trained and untrained workers.
- Conditions affecting the welfare of the worker.
- Character of instruction received by workers in the shops.
- Relative advantage of indentured and unindentured apprenticeship.
- Character of apprenticeship agreements.
- Relation of general school training to efficiency.
- Extent of the educational deficiencies of beginners.
- Types of schools and kind of training necessary in the judgment of employers to increase the efficiency of workers.
- Willingness of employers to cooperate in part-time schooling.
- Kind of part-time schooling favored.
- Practical tests used in determining the efficiency of applicants and workers.

The following "establishment schedule," used in the Richmond survey of 1914, illustrates more fully the scope of this type of schedule:

Name of firm \_\_\_\_\_  
Date \_\_\_\_\_

## VOCATIONAL SURVEY OF RICHMOND, VA.

[NOTE.—All information furnished in this questionnaire will be held strictly confidential and used only for the purpose of determining the kind of industrial education which will best meet the needs of persons engaged in the specified trades of Richmond, Va.]

[INSTRUCTIONS.—Please fill in all blanks and return as soon as possible to Charles H. Winslow, director vocational survey, Administration Building, 805 East Marshall Street. Where space for reply is insufficient, please give information on separate sheets by referring to the number of question answered.]

Name of person to whom future inquiries may be addressed : \_\_\_\_\_

## PART I.—General information.

1. What are your specialties? \_\_\_\_\_
2. Number of employees other than office help :
  - (a) At present time \_\_\_\_\_
  - (b) Maximum number in service in 1913 \_\_\_\_\_
  - (c) Minimum number in service in 1913 \_\_\_\_\_

3. What is the slack season with you? From ----- to -----
4. What is the busy season with you? From ----- to -----
5. Is difficulty experienced in obtaining efficient journeymen workmen for permanent employment? -----  
 (a) Is so, in what occupations? -----  
 (b) Is this difficulty due to—  
 (1) Lack of an apprenticeship system in the shop? -----  
 (2) Lack of opportunity to learn the trade in the shop? -----  
 (3) Other causes? (Specify.) -----
6. What is the age period of maximum productivity for workers? (Indicate age at which the journeyman commonly begins to earn full wage, and age at which earning power begins to decline.)  
 From age ----- years, to age ----- years. Are there exceptional occupations to which the age limits specified do not apply? If so, indicate the limits for these exceptional occupations. -----
7. After how many years' experience as an apprentice and journeyman does a journeyman ordinarily earn his maximum wage? -----
8. In what occupations is the demand for more workers likely to increase most rapidly during the next five years? ----- (Explain why.)  
 -----
9. Is the supply of unskilled labor becoming greater or less, relatively to the demand for it? ----- The supply of skilled labor? -----  
 Why? -----
10. Are promotions frequently made in your establishment from one occupation to another? -----
11. What is the usual line of promotion for a journeyman? -----
12. Are individual workmen frequently shifted from one process, or machine, or occupation to another? -----
13. What trades can a boy learn in your shop thoroughly? -----
14. Can untrained beginners be used? ----- In what occupations can they be used? -----
15. Is the foreign-trained worker a better workman? If so, why? (Is it, for example, due to superior natural ability, or to better training in school, or in shop?) -----  
 What are the deficiencies of the native Americans? -----
16. Can you retain thoroughly trained efficient workmen permanently in your employ, or do you find it necessary to lay off such men at certain seasons? -----

**PART II.—Conditions under which the work is performed.**

[In answering questions 17 to 24 specify in each case occupations and conditions.]

17. What conditions involve peculiar physical training? (Specify jobs and conditions.) -----
18. What conditions involve peculiar nervous strain? (Specify jobs and conditions.) -----
19. What conditions tend to impair health? (Specify jobs and conditions.) -----
20. What conditions especially stimulate the intelligence of the workers? (Specify jobs and conditions.) -----
21. What conditions, if any, narrow and restrict the mental development of the worker? (Specify jobs and conditions.) -----
22. What conditions tend to kill out the worker's ambition and interest in his trade? (Specify jobs and conditions.) -----

23. What conditions, if any, are to be guarded against as exerting morally unwholesome influences? (Specify jobs and conditions.) -----
24. What other conditions of work are important as affecting the welfare of the workers? (Specify jobs and conditions.) -----

**PART III.—How workers are trained.**

25. Does the worker receive any instruction or training in your establishment more than he can pick up on the job? ----- If so, who gives it to him? (Indicate nature of training.) -----
26. What occupations in your shop can be learned in the shop with little or no instruction? -----
27. What are the terms of any agreement of apprenticeship under which apprentices are now working in your shop? (If possible, provide copies of such agreements.) -----
28. Do you find that those who are apprenticed have a better attitude toward their work than those who are not? (Specify advantages and disadvantages of formal apprenticeship.) -----

**PART IV.—Relation of occupation to school training.**

29. In what ways have you found the industry hampered by a lack of elementary school education on the part of beginners? -----  
What knowledge that beginners should have is most frequently lacking? (Specify occupations and deficiencies in detail.) -----
30. In what occupations, if any, is general school training beyond the seventh grade of value in increasing efficiency as workers? -----
31. Assuming that school training beyond the seventh grade is an advantage, what subjects should be taught? -----
32. What kind of a school would most help workers in the various occupations during the apprenticeship period? -----  
Day schools -----  
Part-time day schools -----  
Night schools -----  
Other schools (specify) -----  
For which occupations do you believe that such schools could be provided to best advantage? -----  
In your opinion, what should be taught in such a school? -----
33. If a part-time day school were established, would you as an employer be willing to enter into an agreement providing for a definite period of attendance of apprentices at such a school for a definite number of hours each week, paying them the usual wage while in school? -----
34. For what occupations would you enter into such an agreement? -----
35. If a part-time day school were established, in your opinion how many hours per week should an apprentice attend? -----
36. In your opinion, what should the schools do for the worker before he enters the shop? (Consider what amount of general education the school should give, what amount of vocational or industrial training, etc., and in general what the schools should give that is needed in the shop but can not be acquired in the shop.) -----
37. What do you believe a night school should teach to help the journeyman who wants to advance in his trade? -----
38. What questions do you ask applicants for work? -----

39. What tests do you apply to determine fitness or efficiency of applicants?  
-----
40. What records are kept in your shop to determine efficiency of workmen?  
-----
41. How can the worker be given an interest in his work? Can you suggest a modification of conditions in the shop or in shop practice or in school training? -----
42. Would you be willing to cooperate with the schools in an effort to organize shop practice so as to develop interest and efficiency on the part of the worker? -----

(2) The individual schedules, obtained from the workers, cover such important points as:

Age distribution of apprentices and workers and the nativity of the workers, by trades.

The regular hours of daily and weekly labor, by trades.

Time lost by workers, by trades.

Causes of loss of time.

Extent of fluctuation of employment, by trades.

Extent of overtime worked, by trades.

Years of experience as wage earners of workers.

Years of experience in present occupation and in other occupations.

Age of entrance upon wage-earning occupations, by trades.

Period of apprenticeships served in years by workers in different trades.

Relation of years of experience to hourly wage.

Change of place of employment during apprenticeship, by trades, and reason for changing.

Extent to which workers receive proper instruction in the shop while learning the trade.

Highest, lowest, and average wages, by occupations within trades.

Locality in which workers learned trades.

Change of occupations of present workers, by trades.

Misfits in present position by trades as to natural ability, training, and experience.

Employees working under conditions causing strain or impairing health, through occupational disease.

Possibilities of learning different trades completely in the shop.

Age of leaving school of apprentices and workers.

Hourly and weekly wages of apprentices and workers, by trades.

The following, taken also from the Richmond Survey, illustrates the extent of the "individual schedule":

#### INDUSTRIAL SURVEY OF RICHMOND, VA.

##### INDIVIDUAL SCHEDULE.

[NOTE.—All information furnished on this card will be held strictly confidential and used only to determine what kind of industrial education will best meet the needs of persons engaged in the industries of Richmond.]

Name -----

1. Age ----- years.

2. Place of birth: (a) City ----- (b) State ----- (c) Country -----

3. Occupation -----
4. Member of what union? -----
5. Name of employer -----
6. (a) Regular number of hours of labor per day (except Saturday)? -----  
(b) On Saturday? ----- (c) Total per week? -----
7. (a) Wage per hour? ----- (b) Overtime wage per hour? ----- (c) Wage per week, not including overtime? -----

[NOTE.—Pieceworkers should give approximate estimate of earnings, and state “piece-work.”]

8. How many weeks of work did you lose during the year ended June 1, 1914, through :  
  
[NOTE.—Estimate number of weeks where you can not give exact number.]  
(a) Sickness, ----- weeks. (b) Accident, ----- weeks. (c) Factory shut down, ----- weeks. (d) Temporarily laid off, ----- weeks. (e) ----- weeks. (f) Total time lost, ----- weeks.
9. If you were on part time during any portion of the year, how many weeks? ----- (b) How many weeks overtime? -----
10. How many years have you been in your present trade, including apprenticeship? ----- years.
11. How many years did you serve as an apprentice? ----- years.
12. At what age did you begin to learn your trade? -----
13. (a) Name of city in which you learned your trade? ----- (b) In how many shops were you employed during your apprenticeship? ----- (c) What were your reasons for changing your place of employment? -----
14. (a) Is your present occupation one for which you feel that your training, experience, and ability best fit you? ----- (b) If not, specify occupation for which you are better fitted -----
15. (a) If you had had opportunities for suitable training, do you feel that you would have been more successful in some other occupation? ----- (b) If so, in what occupation? -----
16. Does your work involve peculiar physical or nervous strain? ----- (Specify in detail the nature and consequences of such strain.) -----
17. Are there conditions of your work which tend to impair health? ----- (Specify in detail.) -----

18. Mention below the different occupations at which you have worked. (Specify names of occupations.)	Length of employment in occupation.	Occupations (continued).	Length of employment in occupation.
(a) Present occupation.....	.....	(g) Occupation before that.....	.....
(b) Occupation before that.....	.....	(h) Occupation before that.....	.....
(c) Occupation before that.....	.....	(i) Occupation before that.....	.....
(d) Occupation before that.....	.....	(j) Occupation before that.....	.....
(e) Occupation before that.....	.....	(k) Occupation before that.....	.....
(f) Occupation before that.....	.....	(l) Occupation before that.....	.....

19. Check (—) those qualities most essential to success in your trade:  
(a) Mental alertness. ----- (b) Special adaptability. ----- (c) Initiative. ----- (d) Accuracy. ----- (e) Patience. ----- (f) Strength. ----- (g) Endurance. ----- (h) Keeness of sight. ----- (i) Dexterity. ----- (j) -----
20. (a) While learning your trade did you receive proper help and instruction? ----- (b) What kind of help or instruction that you should have received was not given? (Specify any difficulties encountered by you in learning your trade.) -----

- 21. Can a boy learn your trade thoroughly in the shop? -----
- 22. At what age did you leave school? -----
- 23. What grade did you complete? -----
- 24. In what ways, if at all, have you found yourself hampered by a lack of knowledge or of school training? -----
- 25. Indicate below any school courses, including correspondence courses, taken since leaving school:

Name of school.	Kind of school.	Course taken.	Did you complete this course?	Who paid the tuition?	Cost.
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....

- 26. Why did you take these courses? (Specify reasons for each course.) -----
- 27. Did this school work result in increase of wages? (State, if possible, amount of increase in wages due to this work.) -----
- 28. What other benefits did you receive from these courses? -----
- 29. In your opinion, what should the schools teach to help the worker before he begins to learn your trade? -----
- 30. What do you think a part-time school should teach a beginner during his apprenticeship? -----
- 31. What could an evening school teach to help you in your occupation? -----

TABULAR ANALYSES.

*Tabular analyses of occupations or operations by industries or trade groups.*—The purpose of this character of analysis is to present in brief summaries a description of each occupation or operation for immediate visualizations, which will show the characteristics of the occupations or operations in comparative form. Each such tabulation presents the analysis under two general heads—“Findings about occupations or operations in the industry” and “Findings about education for occupations or operations in the industry.”

The method of gathering material for the above analyses is by visitation to shops and factories to study at first hand industrial processes and conditions and secure the schedule information. This method purposes also to explain to employers and employees the nature of the inquiry and to secure their cooperation. Each interview represents a personal conference (which is of a strictly confidential nature in so far as the individual is concerned) of about 20 minutes for the purpose of filling out the scheduled questions.

The following analysis of painting as used in the Richmond survey is an illustration of the “tabular analysis.”

## FINDINGS ABOUT THE TRADE.

## PAINTING.

1. **Process:** Smoothing and cleaning new surfaces with sandpaper and duster; removing old finishes by burning and scraping, or with paint or varnish solvents. Where the surface is to be painted a priming coat is laid on, all imperfections in the surface filled with putty, and the final coats laid on, each being rubbed down. Where the surface is to be stained and varnished, the stain is applied, the pores of the wood filled, and the several coats of varnish flowed on and rubbed down. Other processes performed by the painter are graining, lettering, stenciling, gold lettering on glass, and calcimining.
2. **Product or specialties:** Inside and outside painting and decorating; sign, wagon, carriage, automobile, coach, implement, and furniture painting.
3. **Importance of trade (number employed):** Approximately 600.
4. **Conditions of employment:**
  - (a) That involve physical or nervous strain: Close, long-continued application to fine work, such as coach painting, lettering, striping, and interior decorating.
  - (b) That stimulate intelligence and interest: Inside painting and decorating, sign painting, lettering, and high-class finishing.
  - (c) That narrow or restrict mental development: Rough outside work or constant exterior painting.
  - (d) That are in other respects important as affecting the welfare of workers (i. e., liability to accident, occupational diseases): Danger from imperfect scaffold rigging; danger of lead poisoning from uncleanly habits and dry methods of sandpapering; chronic diseases are caused by the use of some quick-drying flat paints in poorly ventilated spaces.
5. **Wages:**
  - Apprentices—**
    - (a) Beginning wage, \$3 to \$4 per week.
    - (b) Second-year wage, \$5 per week.
    - (c) Third-year wage, \$6 to \$7 per week.
    - (d) Fourth-year wage, \$7 to \$9 per week.
  - Journeyman—**
    - (e) Minimum wage, \$1.50 per day.
    - (f) Maximum wage, \$3 to \$5 per day.
    - (g) Union scale, \$3 per day.
6. **Hours of labor, regular per day; per week; on Saturday:** 8 to 9 hours per day; 48 to 54 hours per week; 8 to 9 hours on Saturday.
7. **Seasonal activity:**
  - (a) Busy season: March to December, inclusive.
  - (b) Slack season: January and February.
  - (c) Fluctuation in employment: Regulated somewhat by building activities, but men work on the average about 10 months in the year.
8. **Extent to which the trade is organized:** About one-tenth.
9. **Entrance age:** 16 to 18 years.
10. **Years required to learn the trade:** Four years.
11. **Age of maximum productivity:** 22 to 55 years.
12. **Is the supply of labor adequate to meet the demand? (Cause of deficiency, if any):** Supply adequate for present demand for medium-grade workers, but the supply of high-class workmen is not sufficient to meet the demand.



13. Is the demand for labor increasing or decreasing? Increasing, especially for efficient skilled workers.
14. What is the source of supply? Boys from the lower grammar grades and casual labor.

#### FINDINGS ABOUT EDUCATION FOR THE TRADE.

15. What does the worker need to properly equip him for the trade?
  - (a) General education: At least a complete grammar-school education.
  - (b) Trade and technical education: Instruction as to proper rigging of scaffolds; how to keep brushes clean; proper method of spreading colors; neatness in application of colors, especially on inside decorating and lettering; theory and history of the trade; color harmony and design; chemistry of colors and color mixing; mechanical and architectural drawing; sketching; estimating; hygiene of the trade.
  - (c) Manipulative skill: Dexterity in handling brushes in fine decorating and lettering.
  - (d) Other requirements; qualities essential; such as accuracy, etc.: Artistic sense in decorative work; accurate color sense in matching colors; special adaptability; initiative; accuracy; patience; endurance; keenness of sight.
16. What the industry gives—
  - (a) Conditions of apprenticeship: Apprenticeship period of four years.
  - (b) Provision made in shops for systematic instruction of apprentices: None.
  - (c) Trade and technical knowledge: Only enough trade knowledge to equip worker for immediate productivity.
  - (d) Manipulative skill: Dexterity in handling brush.
  - (e) Extent to which trade can be learned in the shop: The trade knowledge required to make the labor productive can be acquired in practice, but very little of the technical knowledge or of the hygiene of the occupation can be so gained.
  - (f) Provision made in shops for systematic instruction of journeymen: None.
  - (g) Line of promotion: Apprentice, journeyman, foreman, contractor, employer.
17. Common deficiencies of workers: Deficiency in general education, technical knowledge, and knowledge of hygiene of the trade.
18. I. What the school ought to give the worker before entering the shop: Complete grammar-school education; prevocational courses in free-hand drawing; courses in color harmony and design.
- II. What the school ought to give the worker after entering the shop—
  - (a) Trade and technical knowledge: Specialized courses covering specific trade and technical requirements of painting.
  - (b) Manipulative skill: The school should provide opportunity for acquiring manipulative skill in special lines of work, such as lettering.
- III. Nature of part-time courses needed: Hygiene of the trade; chemistry of trade; color harmony; design; reading of blue prints; mechanical, architectural, and free-hand drawing; estimating.
- IV. Nature of evening-school courses needed: Same as III for apprentices. Advanced special trade courses for journeymen.

## DESCRIPTIVE ANALYSES.

Descriptive analyses of occupations, a description of each of the occupations within a trade group, or a description of the operations in productive processes is then prepared, which explains these processes and should include the physical, hygienic, and economic conditions of the work, the requirements upon the workers, and the kind of schooling required.

## TYPE ANALYSES FROM THE RICHMOND SURVEY.

## PAINTING.

*Processes.*—The painter performs a variety of operations, some of which are only indirectly or remotely related to the work of laying on coats of oil paint, varnish, water color, stain, or kalsomine. These operations may be characterized briefly as follows: Preparation of wood, plaster, and metal surfaces to receive the finishing coats; removal of old finishes; preparation and mixing of spirit or oil vehicles, and lead, zinc, and color pigments; rubbing down coats; and in certain classes of work, graining, laying gold leaf, gilding, lettering, free-hand drawing, stenciling, rigging scaffolds, and setting glass with putty or moldings in windows, doors, and skylights constructed of wood, metal or stone. These processes, which must be performed under a variety of conditions—in the paint shop, in manufacturing plants of miscellaneous character, or on the outside or inside of dwellings or other buildings—can best be considered with reference to each of the several classes of work which the all-round painter must be prepared to undertake.

*House painting.*—House painters may be divided into two classes, namely, brush hands, who do only rough outside work, and whose only trade qualification is ability to cover extensive surfaces; and skilled artisans, who understand the mixing of paints and can do any sort of inside or outside work.

The first step in house painting, as in other painting, is preparation of the surface to be covered. In new work this consists in cleaning and smoothing the surface with sandpaper and duster. In old work the first step is removal of old finishing coats of paint or varnish, which is commonly done by burning with a Bunsen burner and scraping, or by applying paint or varnish solvents and scraping. Surfaces from which old finishes have been removed must then be sandpapered until perfectly smooth. When the wood has been laid bare, smoothed, and cleaned it is ready for the priming coat of white lead, ocher, or other pigments mixed with linseed oil to the proper consistency. The color is selected for the priming coat with reference to the color of the coats that are to follow.

The priming coat is worked well into cracks and nail holes to protect these broken surfaces and is allowed to dry, after which cracks and holes are filled with putty, which adheres well to the paint. Two or more coats of the required color are now applied, the number and composition of the final coats depending upon the class of work.

A detailed description of several processes undertaken in various fields of painting follows the general description of house painting. These processes are known to the trade as *staining, filling, varnishing, kalsomining, sign painting, gold lettering on glass, and graining.*

These are in turn followed by a description of the specific problem in painting, that of *railroad car painting*. While it is recognized that this particular description may not fit conditions in other communities, it is given emphasis here for the purpose of showing the necessity of detailed description of processes if the industry is to be properly studied for the purpose of finding out what types of vocational education are needed in connection with a given industry:

*Railroad car painting.*—In Richmond railway car painting constitutes a branch of the trade of sufficient importance to warrant separate treatment.

Car painting is classified under two distinct heads, i. e., passenger car and freight car painting. Passenger car painting is a very high grade of work, requiring much experience and skill in all the processes of painting, varnishing, and finishing, while freight car work can be done by any ordinary painter, since no special skill is required for this work of painting of freight car bodies and trucks.

Passenger-car painting may be subdivided as follows: Exterior painting of new cars, interior finishing, and refinishing of old cars.

New cars when brought into the shop are first rubbed down with coarse and then with fine sandpaper. After this is done the wood filler is applied, the filler being a pigment mixed with oil and turpentine to the consistency of a thick cream.

After the coat of filler come three coats of body color, each one being rubbed down with pumice stone and water. The exterior decorations, such as lettering and striping, are then applied and the entire car revarnished.

In interior finishing the new interior woodwork is rubbed down with sandpaper and a coat of clear shellac applied. This forms a foundation for the three coats of varnish which follow. The interior varnish coats are each smoothed by rubbing with pulverized pumice stone and water.

The first process in refinishing old cars is the removal of all old paint by heating it with the flames from a Bunsen burner, gasoline being mostly used for this purpose. This having been done, the entire car is rescraped, scrubbed down with water, and sandpapered. Wood filler is not applied to old work, as the pores of the wood are already filled. Each body coat is rubbed down with pumice and water and the decorations and varnish applied, as in the case of new cars.

It requires about six days to paint a car completely, much of this time being, of course, consumed in allowing the several coats of paint and varnish to dry.

All window and door glass is put in in the car shop, although this work does not come directly under the supervision of the foreman of the paint shop and is not done by the car painters.

With the introduction of steel cars by railway companies a new method of applying paint has been found. This method consists of spraying paint upon the surface with a spraying machine. At the present writing this method has not been introduced in Richmond, all of the paint being applied by hand.

The steel-car painting done in Richmond is all repainting and refinishing. The car is given five or six coats of a body color, each coat being rubbed down with pumice and then decorated and varnished.

Freight car and truck painting requires no special comment, as this is the most common form of painting done in the car shop and does not differ from other rough painting.

*Product or specialties.*—The work of the painter in Richmond is not materially different from that done by painters in other communities, although

railway car painting may be designed as a line of work employing a considerable number of men. In general the work of the trade embraces inside and outside painting of buildings; decorating; sign painting; painting of wagons, carriages, automobiles, steam and street railway coaches; painting of bridges, tanks and structural ironwork, of agricultural implements, and of furniture.

*Importance of the trade.*—According to the Federal census of 1910 there were in Richmond in that year 543 painters, glaziers, and varnishers, of whom 447 were employed in the building trades and 96 in factories. Of the painters in the buildings trades, 421 were white and 26 were colored. The number of painters in the city at the present time is estimated to be approximately 600.

*Conditions of employment.*—The work of the painter is not generally such as involves any peculiar physical or nervous strain beyond that involved in any sort of manual labor. Moreover, the work of the all-round well-trained painter is sufficiently varied to stimulate interest, much of it requiring the exercise of high-grade skill and of artistic sense. In some Richmond shops, however, the work is to a very considerable extent specialized, one man doing the rough work of burning and scraping off old finish, sandpapering and putting on body coats, another filling, staining, and varnishing, and another striping and lettering. In house painting, also, one set of men may be employed entirely on rough work. For the relatively unskilled men who are kept on the rough work there is comparatively little in the occupation that is stimulative, although there is in some cases a chance of promotion to the finer work of inside painting and decorating, sign painting, lettering, and finishing. In some classes of work there is danger of accident from imperfect construction or rigging of scaffolds.

*Hygiene of the occupation.*—The condition of employment which most seriously involves the welfare of the painter is that which exposes him to the danger of poisoning. It has been scientifically demonstrated that many of the materials with which the painter works are poisonous, and it is true that many of the processes are such that it is difficult, especially under certain conditions, to avoid infection. There are, however, certain simple precautions by which much of the danger can be avoided. A brief summary of the findings of scientific investigations and of the present survey as regards the hygiene of the trade follows. In general it may be said that the returns on the schedules of the survey, and the information gathered in personal conferences with painters, are entirely consistent with the findings of scientific research as regards the injurious effects which follow the use of certain materials, and which result from carelessness or improper procedure in various lines of work.<sup>1</sup>

Either or both the pigment and the vehicle of paint may be poisonous and either or both may be perfectly harmless. The higher-priced paint usually contains white lead, linseed oil, and turpentine. Both the white lead and the turpentine are poisonous. The pigment in cheap paint may be something perfectly harmless, as chalk or barytes, while the vehicle may contain so great a percentage of petroleum compounds that it is extremely poisonous, especially when used on inside work in inclosures poorly ventilated.

The pigments which cause poisoning are the lead salts, white lead, or basic carbonate of lead, sublimed white lead or basic lead sulphate, chrome yellow or yellow chromate, chrome green (a mixture of chrome yellow with Prussian blue), red lead, and orange mineral. Lead carbonate and lead sulphate are used in the higher-priced paints, usually separately, but sometimes together,

<sup>1</sup> As regards the nature and physiological effects of paint and varnish poisons the following text is largely summarized from Bulletin No. 120, U. S. Dept. of Labor, by A. J. Carlson and A. Woeful.

and the carbonate much more commonly than the sulphate. Chrome yellow is used for tinting in house painting and in coach painting; chrome green for painting window shutters; red lead in painting structural ironwork; and orange mineral for painting wagons.

Of these constituents lead carbonate is considered the most poisonous; but when sandpapering, mixing, or chipping off old paint, the red lead is the most dangerous, because it is lighter and floats in the air more easily. Chrome yellow is considered to be about as harmful as the red lead. Lead sulphate is not as dangerous as the lead carbonate, red lead, or the chrome yellow. It has been determined by scientific experiment that in human gastric juice the lead carbonate is a little more than twice as soluble as the sulphate; that the lead carbonate is distinctly more toxic than the sulphate; that both produce acute lead poisoning.

Experiments conducted to determine the effect which milk, when combined with the gastric juice, has upon the amount of lead dissolved brought the conclusion that when the milk and gastric juice are in equal proportion the hydrochloric acid of the gastric juice is so completely fixed by the milk proteins, or neutralized by the carbonates in the milk, that the mixture has virtually no solvent action on the lead salts.

On the basis of scientific investigations three practical suggestions have been made for safeguarding painters against poisoning: (1) That since lead carbonate is so much more toxic than the lead sulphate, lead workers as well as the State shall aim at the elimination of the use of the carbonate in all the industries where this is possible; (2) that since basic lead sulphate, or sublimed lead is poisonous, none of the precautions usually advocated for the protection of workers in lead be neglected by those handling lead sulphate; (3) that, in addition to taking other important prophylactic measures, workers in lead salts should drink a glass of milk between meals (say at 10 a. m. and 4 p. m.) in order to diminish the chances that the lead they have swallowed be dissolved by free hydrochloric acid of the gastric juice, as in some persons there is considerable secretion of gastric juice in the empty stomach.

Dust from the sandpapering of lead-painted surfaces is one of the most important causes of lead poisoning. The dust thus raised is inhaled and lodges on the nasal and pharyngeal mucous membrane and is then swallowed. Investigation has shown that the great bulk of this dust finds its way into the stomach and not to the lungs. This causes the poisoning of the workman, as the lead in the dust is dissolved by the free hydrochloric acid in the gastric juice and is easily absorbed. This dust is dangerous not only to the man doing the sandpapering, but also to the others working near. The danger can be entirely eliminated by the use of pumice stone and water in rubbing down coats, or, if it is a first coat where this is apt to raise the grain or on metal where it may cause rust, by moistening the sandpaper with some cheap mineral oil. Sandpaper so oiled lasts as well as when used dry, and the results so far as the work is concerned are as good when oiled paper is used as in dry sandpapering.

When metal surfaces are to be repainted they are usually chipped clean, and often the work is done by a machine using compressed air. This work is very dangerous, and a much better way, whether on wood or metal, is to burn the paint, causing it to curl and shrivel up, after which it can be easily scraped off. Some authorities speak of lead poisoning being acquired by the use of the burning method; but this is not apt to happen unless the painter should hold the flame long in one place and thus cause considerable smoke which might carry mechanically small particles of lead. The boiling point of lead is so high that the danger from evaporation from the heating required is very slight. Danger of poisoning from this method arises, however, when the burned paint is allowed



to lie upon the floor of the shop until ground to dust. This dust is stirred up by the feet of the workmen or by moving materials, and is constantly inhaled and swallowed by the workmen. The scraps of paint should in every instance be cleaned up before they become dry.

The painter should be extremely careful in handling his food or tobacco and should avoid wearing dusty and paint-soaked clothing.

The dangerous vehicles are turpentine, benzine, naphtha, benzol, wood alcohol, and amyl acetate. Turpentine used as a dryer and for thinning is a constituent of many paints and varnishes. It sometimes makes up the entire vehicle. The inhaling of much turpentine-laden air causes headache, dizziness, and irritation of the throat and of the urinary system. If the workman is exposed for long periods to turpentine fumes, it often causes chronic inflammation of the bladder and kidneys. These fumes cause also inflammation of the skin and often affect the nervous system, as is evident in the typical symptoms of staggering and in extreme cases loss of consciousness.

Benzine and naphtha are used in hard oils as driers and very often constitute a large percentage of the vehicle in cheap quick-drying paints. Fumes from these liquids affect the nervous system much as does alcohol, causing staggering, defects of memory, and disturbance of sight and of hearing. Where the workman is long exposed to these fumes, chronic poisoning takes place, causing skin diseases, weakness, nervousness, and sometimes even impaired mentality.

Benzol is used in priming and as a paint and varnish remover because of its penetrating and solvent qualities. The benzol fumes are very dangerous and may be fatal. They cause changes in the blood, hemorrhages of the organs and mucous membranes, and degeneration of the organs. The symptoms of this poisoning are a flushed face, dizziness, and headache, followed by a blue appearance of the skin, nervous excitement, or stupor accompanied by sickness. If the poisoning is chronic, ulcers appear on the gums and lips.

Wood-alcohol poisoning comes mostly from inhaling the fumes while using varnish. This causes headache, hoarseness, twitching of the muscles, weak heart, unconsciousness, and temporary or permanent impairment of sight even to the point of complete blindness.

Amyl acetate, derived from fusel oil and acetic acid, is used in varnishes, gilding fluids, and as a paint solvent. The fumes cause headache, uncertain movements, difficulty in breathing, sleepiness, bad heart action, and poor digestion.

Poisoning from the various paint vehicles may be avoided in most cases by insuring good ventilation, either natural or artificial, of shops or rooms where work is being done. When this is not possible, the men should be changed as often as possible on work, so that no one of them will become enough poisoned for permanent injury.

Although the vehicles in the various leadless paints are usually much more poisonous than those used in lead paint, the introduction of these paints into the industry is a great help toward the betterment of hygienic conditions in the trade, as it is much easier to avoid poisoning from the vehicle than it is from the various lead pigments in the paint.

It may be noted that the paints used in railway-car painting are almost entirely the new leadless or almost leadless kind. The smoothing of all paint surfaces is done either by the use of pumice stone and water or with oiled emery cloth or sandpaper. All paint is removed by burning and scraping, and the work is done in large open buildings, where the ventilation is such that there is very little, if any, danger from the volatile substances in the paint. Railway-car

painting in Richmond is therefore to a very large extent free from the dangers of poisoning above cited.

*Economic conditions.*—House and sign painters are to a very considerable extent free lances, working first for one contractor and then for another, or independently on their own account. The character of the work done by them varies greatly from job to job, and partly because of the miscellaneous character of their work and partly because of the nature of the climate in Richmond employment is not markedly seasonal. The slack season is from the 1st of January to the end of February, and the men are employed on the average about 10 months during the year. The sign painter, when weather does not permit outside work, usually has on hand work which can be done in the shop. As regards painters in the car shops and in manufacturing plants, employment is generally steady, and the seasonal fluctuations inconsiderable. Hours of labor range from 8 to 9 hours per day, or 48 to 54 hours per week, full time being worked on Saturdays. Skilled journeymen earn \$3 per day, the minimum wage for unskilled labor being \$1.50. Wages are low as compared with wages paid in other trades. The trade is about 10 per cent organized.

*Age period of productivity.*—Boys enter the trade between the ages of 16 and 18 years, and serve a four years' apprenticeship. The age period designated as the period of maximum productivity is from 22 to 55 years.

*Demand for labor.*—House painting is a field in which the demand for labor is increasing, but the occupation is, nevertheless, somewhat overcrowded, especially with semiskilled workers. The demand for sign painters is increasing, and there is a scarcity of skilled high-grade workmen. In the car shops and in manufacturing plants the demand for labor is fairly stationary. In general, the supply of medium-grade labor seems adequate for the present demand; the supply of high-grade labor is insufficient to meet the increasing demand in special lines. Workers are recruited from the lower grammar grades and from casual labor.

*Educational trade and technical requirements.*—In the way of general education the occupation of the painter makes no special demand upon the worker beyond that degree of general education required for all workers to insure to them advancement in proportion as they acquire in practice trade and technical excellence.

The trade and technical knowledge required by the skilled artisan is, however, very considerable. The nature of this knowledge will be apparent from the foregoing account of the processes and hygiene of the occupation. Some trade knowledge pertains even to the simplest processes, as, for example, to the process of rubbing down surfaces, where sandpaper of a proper grade of fineness must be selected, or some other material, such as ground pumice stone, rotten stone, fine steel wool, or curled hair. The painter must know which of the many varieties of fillers, sizes, or foundations should be used on woods of different qualities and in different classes of work. He must know something of the preservative qualities of different finishes. He must know how to mix oils, pigments, and varnishes for body coats, for flat and for glass finishes, for inside and for outside work. In all color work he must have a knowledge of color mixing and harmony.

The degree of manipulative skill required by the painter varies from the small amount required to lay on rough body coats to the very considerable amount required for flowing on varnishes, and for the fine work of striping, lettering, and decorating. The characteristic tool of the painter is the brush, which varies from the small round pencils and sash tools of camel's hair to the large round or flat brushes of hog bristles. In the handling of these tools a very high degree



of manipulative skill is required for certain classes of work. In all classes of work the skilled hand economizes time, labor, and material.

In addition to the above qualifications, the painter should possess an accurate color sense, an artistic sense, which will enable him to harmonize colors in inside decorating, and to do original work in designing; a knowledge of alphabets for lettering, and a natural talent and skill in freehand drawing. Finally, it is vitally important that the painter shall have a thorough knowledge of the hygiene of his occupation.

*What the industry gives.*—The workers in the skilled class enter the trade through an apprenticeship, usually of four years. During these four years the apprentice is occupied as follows. In the first year he helps by running errands and cleaning brushes, and picks up such information as he can from observing the workmen; he learns to mix paints and to rig scaffolds; he does inside and outside painting, and learns to remove stains by the use of lime and acids. In his second year the apprentice is put on the scaffold and works with the journeymen putting on finishing coats; he learns how to remove old finish by burning and scraping, or by the use of solvents, and how to prepare work for new finish. In his third year the apprentice is put on inside work, such as graining and varnishing, and is in general allowed to do such work as he is able to do. During his fourth year he is given such work as he has not already done, and by constant practice becomes more proficient in all lines of work. This apprenticeship gives the boy a small amount of trade knowledge and enables him to acquire a fair degree of manipulative skill.

No provision is made in the shops for systematic instruction either of apprentices or of journeymen. The line of promotion is from apprentice to journeymen, and from journeymen to foremen. The skilled painter may go into business on his own account.

*Deficiencies of workman.*—The deficiency most commonly acknowledged by the painters is deficiency in the general education which they believe to be a condition of advancement in their trade. Nearly all painters have a very inadequate knowledge of the hygiene of their occupation. Few possess the trade knowledge necessary for estimating costs and qualities of material, and few possess an adequate knowledge of the principles of color mixing, color harmony, or design.

*What the school ought to give.*—Before entering the shop the painter should have received in the public school a complete elementary general education and prevocational training in drawing, design, and color harmony.

A serious obligation rests upon the school, as regards instruction of apprentices and journeymen in the shops. This obligation arises from the fact that a thorough knowledge of the hygiene of the occupation is absolutely essential as a safeguard against poisoning. Such instruction, it would seem, should take precedence over every other sort of continuation work. Assuming, however, that this instruction is given, the school may properly undertake to give instruction organized with reference to the technical requirements of the painter by offering courses covering freehand drawing, lettering, design, color harmony, composition of paints, varnishes and other materials, and modern practice in special lines of work.

These courses may be grouped under the following heads (see also outline of course for painters):

1. Trade hygiene: Diseases and dangers of the trade.
2. Art: Color harmony, freehand drawing, and design.
3. Chemistry: Chemistry of color pigments.
4. Mathematics: Estimating.
5. Business practice: Methods of doing business; bookkeeping.

## Chapter VII.

### RELATION BETWEEN VOCATIONAL EDUCATION AND VOCATIONAL GUIDANCE.

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The most fruitful field of vocational guidance, like that of vocational education, is the public school. Vocational help will always be needed for young people outside of the schools, and for older persons who have not found themselves in life work; yet the best service can be rendered in the plastic years of school life, when courses of study and school influences may be made to contribute to the real preparation of the young person for a vocation.

Before discussing at length the place of guidance and its relation to vocational training, we may speak of the needs and conditions which have within half a decade produced the vocational guidance movement.

The age which has made a watchword of the term "efficiency" is peculiarly sensitive to all forms of waste. It calls for such training as shall eliminate waste. The conservation of our natural resources is simply another phase of the antiwaste, or efficiency movement. There is, likewise, a movement spreading through the country which looks more closely to the conservation of our human resources. This movement finds its expression in vocational guidance and vocational education, which are, in a large sense, inseparable.

While the movement for vocational education has been conspicuously advocated from the side of industry, the vocational guidance movement has been distinctively the product of present-day social service. Both movements in their present developments and in their future activities belong to the socially minded educator, philanthropic worker, and employer.

Drifting from school to work, and from job to job, is now clearly regarded as a very costly kind of human waste. Working in undeveloping employments means a waste of time and energy to the worker and a loss to society. To stop this waste and to encourage each boy and girl to plan and make the most of life are the chief aims of the vocational movement.

There is a human waste due not only to poverty, ignorance, and lack of opportunity, but due also to misdirection of effort. Let us consider for a moment the relation of our topic to the urgent matter of unemployment.

The causes of unemployment are divisible into two general classes, impersonal or economic, and personal. Although the latter group of causes is doubtless the less important, there seems to be quite often a commingling of both the personal and the impersonal causes; and in the judgments of the individuals affected, both the employer and the employee, the personal elements loom large. It is with these personal causes that the remedial agencies deal, and it is to these personal causes that the vocational movements are, for the present at least, largely directed.

Excluding abnormal conditions of industry, the selective influence of personal qualifications operates continuously. These personal elements under modern conditions are not only the conventional industrial virtues like steadiness, temperance, and application, but the subtler, yet equally potent, factors, such as intrinsic fitness, a life-career motive, and a life-career plan. To the student of vocational guidance these last are highly important elements not only as bearing on the incidence of unemployment, but also as affecting the economic career as a whole.

The overcrowding of the traditional occupations, such as law, medicine, and the clerical pursuits, shows what little effort society makes to direct talent into its possibly most appropriate opportunities. Communities obviously should organize such incentives and guidance as will awaken interest in other occupations just as commendable and perhaps more promising than those into which the majority of our young people drift.

Through extension of vocational training opportunities, then, and especially through the provision for prevocational schools, which, when their purposes are better understood, will become self-discovery schools, and as such afford young people and their teachers a most important basis for vocational guidance, the schools are beginning to deal with the task suggested.

Vocational service endeavors to help pupils to self-knowledge, and to reconstruct school programs in order that they may more sensitively minister to the self-discovery and economic needs of different pupils. Vocational service is an instrument for talent saving. In its larger relationships, however, vocational service is only one phase of the social organization of school and vocation. It introduces into education the idea of fitness of the individual, apart from class or group; it introduces into employment the idea of fitness of the task, and appraises the occupations in terms of career values as well as social worth.

There are three directions in which vocational guidance and training provision for the young person already at work must be made: First, to enable the boy and girl to advance in their present employment; second, to prepare them for a change to something more desirable, whether related to the present employment or not; and, third, to stimulate their general development as citizens, homemakers, and social beings.

There will be in the coming years a large increase not only of vocational schools, as such, for the homemaking, professional, agricultural, and commercial employments, but also a large variety of experiments in trade instruction of boys and girls and special groups of young people, some of whom can afford only a limited time.

Comprehensive vocational assistance, through specially trained teachers and others, is now recognized as a proper part of the new machinery of service, service which should begin in the elementary grades and continue, at least, to the period of young manhood and womanhood. This seems to be the conviction of thoughtful educators everywhere.

The old vocational influences have disappeared. Ages less sensitive to childhood's rights than ours, the Middle Ages at all events, saw that the prosperity of the craft as well as of the craftsman depended on rigorous direction and training during the plastic years, and an apprenticeship system resulted which the world will probably not see again. The employer was the teacher, the shop the trade school, and a legal responsibility rested on the employer for the right upbringing and the health and eventual efficiency of the apprentice. Not only was industry, so far as it was organized and monopolized by the craft guilds, thoroughly educative, but the home with its household manufactures, the father's shop, the mother's kitchen, and the simple economic environment, all tended to serve as potent directive and vocationally educative influence.

This condition is gone forever. Much of our schooling at best is devoted to abstract preparation for life, instead of treating the child as if living and now in life. Social control and democratic education are the forces which now must do the work of those vanished vocational forces as yet unreplaced in the preparation of youth for life.

Out of such needs in the fields of education and employment the Vocation Bureau of Boston, as an illustration, has developed the following general aims:

1. To study the causes of the waste which attends the passing of unguided and untrained young people from school to work and to assist in experiments to prevent this waste.
2. To help parents, teachers, children, and others in the problems of thoughtful choosing, preparing for and advancing in a chosen life work.

3. To work out programs of cooperation between the schools and the occupations for the purpose of enabling both to make a more socially profitable use of human capacities and opportunities.

4. To publish vocational studies from the viewpoint of their educational and other efficiency requirements, and of their career-building possibilities.

5. To conduct a training course for qualified men and women who desire to prepare themselves for vocational-guidance service in the public-school system, philanthropic institutions, and in business establishments.

6. To maintain a clearing house of information and investigation dealing with life-career problems.

The public school, as already suggested, is the logical starting point for the work of vocational guidance. Here the child is under daily observation, and the problems of the family make themselves known in countless ways. Just as we have added to the school service the nurse, the physician, the play supervisor, and other agencies of enlightened modern demand, we need to supplement the teacher's insight into the character and attainments of the pupil by the practical cooperation of a vocational counselor in touch with the demands, the conditions, and the opportunities of the world of work, in touch with the intimate details of the families in a particular school neighborhood, and working hand in hand with the teacher, the parent, and later with the employer in making the best investment of the boy's training and possibilities.

Vocational guidance must cooperate with vocational education through the natural channels of approach. These are: The school authorities, the teachers, the parents and advisers of youth, the employers of labor, and public opinion.

*Through school authorities.*—As a beginning there may be need of a privately supported vocational-guidance bureau to work with the school boards and school officers of a town or city, as the Vocation Bureau of Boston has cooperated for five years with the Boston school authorities.

The vocation bureau entered into a definite agreement with the Boston school committee to establish vocational guidance in the schools of the city. A committee of six masters was appointed to promote cooperation. A system of vocational-record cards was established for elementary and high schools. This system showed the parents' plan for the pupil, the especial ability of the pupil in some line, his physique, and finally his own plan of life, whether to enter a trade, profession, or business. Teaching thus became more personal, and consequently more helpful from the vocational standpoint to the individual boy or girl.

Along with this card system, meetings of teachers were held for the study of vocational conditions and questions, and addresses were given by people of special fitness before schools and parents' associations.

One of the principal provisions in the arrangements between the school committee and the vocation bureau was for a group of teachers to be known as vocational counselors, to be appointed by their respective principals and to represent every school in Boston. Over 100 teachers were so appointed, and they have been meeting throughout each school year to consider the educational opportunities of the city, the vocational problems of the children, and to confer with employers and others who have been invited to the sessions. The number is now over 200.

The work of the vocational counselors has been a labor of love. Nobody has expected that attending occupational talks would alone equip for effective vocational guidance. Highly important results, however, have come out of these meetings.

In the first place, every school in the city has had one teacher—indeed, in some schools committees of teachers have formed voluntarily—to give time and thought to the dropping out from the grades of many boys and girls. These teachers are personally studying the home, street, and other influences which steady or unsettle the children when the compulsory education laws no longer restrain; they are trying to discover what assistance a school can give to parent and child perplexed with the problems of a life career.

There is plentiful testimony showing that fathers and mothers now turn to the Boston schools as never before for advice and help concerning their children's future. Questions as to what high schools or vocational schools and what courses to choose are continually coming before the counselors. The abilities, the interests, faults, and promising tendencies in the children are topics of grave discussion between parent and teacher or principal, the viewpoint being not only that of present school requirements, but also that of the probable careers of the children. In the classrooms the occupational talks have been repeated in order to make clear the efficiency requirements of the practical world outside. School programs, and even commencement-day programs, have begun to show how schools are facing the challenging world which is soon to claim the productive years of these children.

This awakened practical interest of the schools in the life work of the children can not stop short of comprehensive supervision and protection of the after-school careers of boys and girls. Already teachers, on their own initiative and with an expenditure of much time and energy, have gone into the homes of their pupils, and have sought to get first-hand knowledge of the industrial environments. If our schools are to have any guiding relation to life, and all educational reform clamors for this relation, teachers must be given every incentive to touch in such personal ways the realities of the life which their pupils will live.



It should be pointed out here that the creation of this large body of vocational counselors was intended to afford a foundation for the more specialized and technical requirements of genuine vocational guidance. In 1912 the school board detached, at the suggestion of the vocation bureau, three capable counselors to make investigations which should prepare the way for more effective vocational guidance work in the Boston schools.

After the vocation bureau had conducted this work for two and one-half years, the school board early in 1913 voted to establish a vocational guidance department. The number of school vocational counselors was increased to over 200. The plans formulated and carried on under the personal direction of an assistant superintendent are in some of their interesting details as follows:

**SUPERINTENDENT'S CIRCULAR NO. 10, 1913.**

*To the Principals of Schools and Districts:*

In order to make the work in vocational counseling uniform, it seems desirable to have the counselors all over the city chosen as follows:

- Two from each elementary school building containing a graduating class;
- One from each building containing grades above the fourth but below the eighth;
- Two from each high school.

The plan which will be outlined later will consist of (1) work with the graduates and (2) with those who drop out before the graduation; hence it will be wise to have the counselor who is to deal with the graduates an eighth-grade teacher, while the other counselors may be teachers of lower grades.

Realizing the high character of service which has been given by the present group of vocational counselors, it is hoped that so far as possible they may be retained, and that in choosing additional counselors the principals will bear in mind the fact that it is essential to the success of our undertaking to have only those who are keenly interested and willing to give of their time and strength. Aside from the counselors, all principals are urged to attend the meetings whenever possible and to cooperate in every way possible.

*Through school teachers.*—Vocational guidance has its greatest opportunity to serve vocational education through the proper training and equipment of teachers and school vocational counselors. The course given by the vocation bureau to the Boston teacher counselors has been developed through these several years into a university course on vocational guidance. It was given in the Harvard University summer school in 1911, 1912, and 1913; in the University of California and the State Teachers' College, at Greeley, Colo., in 1914 and 1915; and now in Boston University and Teachers' College, Columbia University. Some of the time a class has been conducted in the offices of the bureau.



In these courses many teachers, vocational counselors, and civic and social workers have received suggestions intended to help them advise youth. Gradually the vocational counselor will have less teaching and more professional counseling to do.

**OUTLINE OF COURSE ON VOCATIONAL GUIDANCE AT BOSTON UNIVERSITY.**

**1. The Need of Vocational Guidance.**

Discussion of investigations of the problem.

Local experiences.

Federal report.

The dropping out from school.

Problems and discussion.

English reports.

**2. Methods of Investigation.**

Needs.

Details of a typical study.

Analysis of "necessity" as a cause for leaving school.

Standard authorities.

Problem of school and college education.

Problems and discussion.

**3. The Scope of Vocational Guidance.**

Tentative definition.

Description of main issues.

Analysis of terms.

Discussion of various definitions.

Beginnings in vocational guidance.

Problems and discussion.

Reading of class papers.

**4. The Start in Life.**

Entrance into a trade.

English apprenticeship, etc.

Present-day industry.

Material for vocational guidance.

Problems and discussion.

**5. Occupational Study.**

Outline of method.

Addresses by employers, etc.

**6. Classification of occupations.**

Analysis of demands and qualifications.

Addresses by employer, etc.

**7. Material for Vocational Investigation.**

Conference with experts.

Discussion of reports.

**8. Social Legislation and Vocational Guidance.**

Lecture and symposium by specialists.

**9. Educational Survey and Guidance.**

Methods of educational guidance in schools.

Symposium.

Review of material.

**10. Factors in Vocational Choice.**

Personal, educational, social, and economic analysis.

**11. Factors in Vocational Choice (continued).**

12. Vocational Guidance Technique.
  - Analysis of individual cases.
  - Typical sessions of counselors.
  - Methods of recording data.
13. Phases of the Vocational Guidance Movement.
  - Review of experiences.
  - The work of a vocational bureau.
14. Vocational Guidance Abroad.
  - England.
  - Scotland.
15. Germany.
16. Methods of Follow-up and After-care.
  - Discussion of programs.
  - Medical inspection at the start in life.
17. Relation to Employers.
  - Hiring, promotion, discharge.
  - Symposium.
18. Relation to Employers (continued).
19. Relation to Vocational Education and Other Movements.
  - Prevocational, etc., types of schools.
  - Educational readjustment.
20. Review of Investigations by Members of the Class.
  - Social gains.
  - Organizing vocational guidance.
  - Final definition and terminology.

This course of study aims to provide teachers with the theory and technique of vocational counseling. Following is a list of some of the topics treated by experts at the Boston counselors' meetings:

TOPICS TREATED AT BOSTON COUNSELORS' MEETINGS.

The shoe industry.	Opportunities in the department store.
The boy and girl in the department store.	A social suggestion on boys and girls as wage earners.
The machine industry.	Trained nursing.
A group of trades for boys.	Condition in industry for the young girl wage earner.
The telephone industry for girls.	Vocational opportunities for the girl who completes the high school.
Stenography and typewriting for girls.	The shoe and leather industry.
Bookbinding for girls.	Lunch-room and restaurant work for young women.
Architecture.	The department store.
The use of statistics.	Education for store employment.
Mechanical and civil engineering.	The metal trades.
Electrical engineering.	The profession of business.
The machine trades.	Girls in the candy factory.
Agriculture.	Printing.
Textile-mill working.	The new child-labor law.
The building trades.	
The selling clerk.	
The needle trades.	

*Through parents.*—Vocational guidance has a great opportunity and responsibility in its cooperation with parents and parents' organizations.

The Boston Home and School Association, for example, is founded on the basic principle of the proper home training of children. To the clear conceptions of the value of fostering cooperation between the home and the school, of the importance of studying methods of child training, and of the relation of civic improvement to child welfare is to be attributed the notable growth of the association.

Through this organization parent and teacher unite in working for the child. Such understanding and cooperation meet a great need in the public-school system.

The meetings of parents' associations furnish a rare opportunity for parents and teachers to become acquainted. The parent may tell the teacher his ambitions for the child and explain peculiarities which might otherwise puzzle the teacher; the teacher, on the other hand, has an opportunity to explain motive and method in school work and to act as a friendly adviser. In vocational guidance this work is of supreme importance, dealing with the home side of guidance, and may be briefly summed up by a quotation from an annual report of the association:

In no place is this mutual assistance more necessary than in choosing a vocation. Neither the parent nor the teacher can decide, to the pupil's best advantage, as to what occupation he should go into until his intellectual propensities, as shown by his school work, are measured with his general aptitudes as illustrated in his home life. Consultations of parents and teachers have proved most effective in gaining a true estimate of the pupil's fitness. That the parents appreciate the value of such cooperation is shown by the large attendance at the meetings where the subject of vocational opportunities and preparation for a vocation is discussed. The opportunity to meet personally a vocational adviser has been gladly seized by the parents. In order to obtain data which will give the teachers enlightenment with regard to every child, the Home and School Association proposes to send out to parents a questionnaire which will elicit the following information: 1. The educational ambitions of parents for their children. 2. How much parents know of educational opportunities. 3. The vocational ambitions of parents for their children. 4. Limitations of parents to carry out their desires. 5. How much parents know of vocational opportunities, and how much serious thought they have given to the vocational needs of their children.

The vocation bureau has counseled with parents and advisers of youth from its beginning. It has cooperated with the Boston Home and School Association steadily, and the two organizations have published jointly *The Boston Home and School News-Letter*, which has been of value to the fathers and mothers of thousands of school children.

*Through employers.*—The vocation bureau has constantly borne in mind the proposition that a sound development of its work depends not only on close contact with schools, neighborhoods, teachers, parents, and children, but also with employers, business bodies, industrial experts, and the occupations themselves in all their breadth,

variety, and changes. Occupational investigation, fundamental though it be, is not vocational guidance. The investigation determines, to be sure, what kind of cooperation is possible or desirable, and on what terms; it is the basis of vocational information, of plan making for special training courses in schools, and of social and legislative action; but the vocational guidance idea requires that contact with the employments be something more than onlooking. Moreover, there are splendid agencies for specialized research, such as the Sage Foundation, with its thoroughgoing studies of industry. A vocation bureau must be, among other things, a research body; nevertheless, it must depend for some of its most valuable material on important research agencies. Moreover, its work must not duplicate the work of the child-welfare agencies, nor solely promote vocational education. The National Society for the Promotion of Industrial Education and the commissions at work in various cities and States are better equipped for this work. It is the special business of a vocation bureau to organize the prolonged service which takes hold of the child when the life career motive is awakened, to help guide, train, and tide over that child during the difficult transition period into the occupations; direct the child, when it is genuinely ready for employment, into the most advantageous openings possible; and stand by the young workers, so far as may be, throughout their occupational life.

The employer's interest is absolutely essential to such a plan. To fail to profit by his criticism, by his point of view, by his important cooperative possibilities, is to invite failure. The bureau is in close touch with a large number of industrial, commercial, and professional concerns in sympathy with its purposes. Employers have approved its methods and have supported its efforts for more thoroughgoing protection and opportunity for the young worker.

Better to understand the employer's relation to vocational guidance, the bureau organized in 1912 a conference of employment managers. Men representing a score or more of the important manufacturing and business establishments have been meeting regularly in informal conference. In December, 1912, an Employment Managers' Association was formed, whose objects are defined in its constitution as follows:

#### ARTICLE I.

##### NAME AND OBJECT.

**SECTION 1.** The name of this organization shall be the Employment Managers' Association.

**SEC. 2.** The objects and purposes of the organization shall be:

1. To discuss problems of employees; their training and their efficiency.
2. To compare experiences which shall throw light on failures and successes in conducting the employment department.

3. To invite experts or other persons who have knowledge of the best methods or experiments for ascertaining the qualifications of employees, and providing for their advancement; and more particularly to study the questions connected with the most effective employment of young people.

*Through research and publications.*—Vocational guidance, like vocational education, must base its work not only upon a study of the youth and his environment, but upon accurate knowledge of the occupations open to young people. Such knowledge, wherever possible, should be gained by first-hand investigation of shops and factories and business offices in every community.

The objects to be sought for in such studies are:

1. To present vocational facts simply and accurately.
2. To make accessible a knowledge of all the employments—the professions as well as the trades, skilled, semiskilled, and unskilled; the business, the homemaking, and governmental callings; and also any new and significant vocational activities of men and women.
3. So far as possible to supply parents, teachers, and others interested with the material necessary for an intelligent consideration of the occupations, their needs, demands, opportunities, relative desirability, training requirements, and the possibilities they offer for careers.
4. To analyze the relation of vocational aptitudes, interests, and habits to modern industrial demands, and thus lay an adequate foundation for a system of training regardful of social as well as economic needs.

The proper utilization of such material should make for a heightened interest in the community's training opportunities, and should make the fact increasingly clear that society will gain immensely by devoting the adolescent period in whole or in part to preparing for the start in life. Above all, the studies should help toward a clearer understanding of what working life ought to develop in social as well as in wage-earning efficiency.

They should show also clearly and emphatically what the world of employment expects and demands of the vocational school.

The movements for vocational guidance and vocational education have done nothing better than in making clear the social wastefulness of employing children from 14 to 16 years of age without a compensating program of training. These are the foundation years of vocational efficiency. Skilled mechanics know this, and they safeguard these years for their children by careful search of available apprenticeship opportunities.

The laws in several States stipulate that children from 14 to 16 years of age must be at work or at school. These provisions mean

little unless they carry a supervised program which looks to definite training for advancement in a selected occupation.

This at bottom is the social viewpoint. Efficiency in living life as a whole, as well as efficiency at work, is the goal of the vocational movement in education. Vocational guidance aims to lay down the specifications for a life career, vocational education to supply the best methods for working them out; and if the message of these enterprises is heeded in the occupations, we may expect employment to be a period for consummating the labors of the school.

## **Chapter VIII.**

### **PROPER METHODS OF FINANCING.**

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#### **PRELIMINARY.**

The chief source of material used in the preparation of this chapter is the Report of the United States Commission on National Aid to Vocational Education. Credit should therefore be given to the members of this commission for the fundamental ideas which underlie the main features of the following suggestions. The terms used in describing the various types of education are the same as those used in the chapter upon terminology, to which the reader is referred for specific definitions and illustrations whenever words used are not clear. Appreciation should also be expressed to the National Society for the Promotion of Industrial Education for use of its reports, to the Massachusetts State Board of Education for its report of 1913-14, and to such other persons or bodies as have contributed in any way to the literature which has helped in the final presentation of this important topic.

It was thought that the method of consultation and conference in arranging this material would give a result which would be of much more value than would be the opinion of any single individual. This chapter should therefore be regarded as a composite statement of the most suggestive ways of financing this method of education which have yet presented themselves.

Cost is the heart of the business system. The business man or corporation counts and provides for cost before any undertaking is entered into, and at every step of its later development. Sound finance lies at the basis of every successful enterprise in the business and industrial world, and it is certainly of the highest consideration in the great fields of education, both general and special.

The established forms of education in the so-called cultural and liberal branches have long been maintained at public expense. As it is so largely a question of State-wide welfare, the State is recognized as the large unit. supervising, cooperating with, and aiding the work of the local unit of town or city.



Along with general studies, training for business and the professions has had a measure of provision; but vocational education in its broader sense has only lately come to receive even a part of the attention it rightly deserves.

In early times the responsibility of training for an industry rested upon the family. Then the son followed the trade of his father.

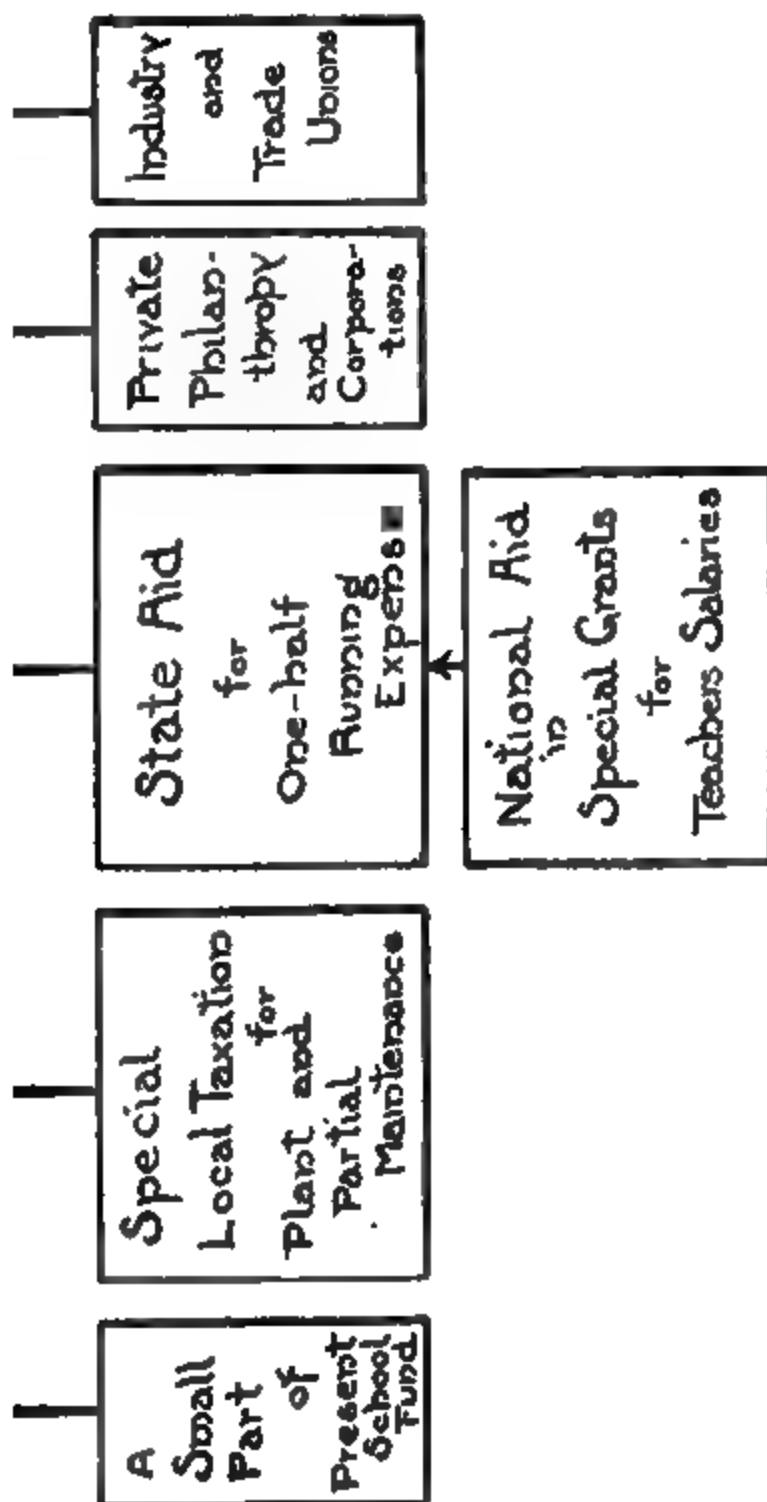


CHART II.—FINANCE.

Later this responsibility was transferred, in a measure, to industry; and the apprenticeship system resulted. Now has come the movement to transfer the responsibility still again and place it upon the State through the establishment of schools. And thus the schools are in turn asking industry to help bear the burden, to the extent of providing apprenticeship opportunity and counsel to supplement the best that the schools can do.

Before discussing methods in financing vocational education, let us clearly understand just what it is that calls for support. From every point of view the establishment of a system of vocational schools should be clearly defined in its financial aspects. Its purposes and provisions must not be confused with those of other kinds of education, however worthy these may be in themselves.

The idea is spreading rapidly among the States that State support should be given for education carried on by local communities. The general tendency seems to be for the State to give money to encourage new kinds of education. Local communities are still left to pay largely for the support of the liberal and cultural education which the schools have long given.

Vocational education, then, is the later form that calls for additional support. Briefly stated, there are six kinds of vocational education, as follows: Professional, commercial, agricultural, industrial, home making,<sup>1</sup> nautical.

Professional education is provided for by public and private schools and institutions, for pay, in the East; and by all grades of educational institutions, particularly State universities under certain conditions without cost to the student, in the West. It is usually for persons who have completed their secondary education, however.

Commercial education is also provided for, in some measure, by public commercial schools and courses, by private business schools, and by college and university departments of business administration and finance.

Nautical education, the least of all in numbers affected, is provided for by the Massachusetts Nautical School and by private and professional schools.

We have left, then, three kinds of vocational education—agricultural, industrial, and household arts—calling for public and private support, in addition to the great sums of money already devoted to the cause of education.

The problem of support for these three forms of vocational education has also three natural and clearly defined aspects:

- I. Vocational education supported by the public.
- II. Vocational education supported by private philanthropy and by corporations.
- III. Vocational education supported by joint agreement between employers' associations and labor unions.

#### I. VOCATIONAL EDUCATION SUPPORTED BY THE PUBLIC.

This is much the largest division of the problem and the one awakening the greatest interest the country over, even though but few of the States have as yet passed State-wide laws establishing systems

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<sup>1</sup> Used at present as a more comprehensive term than "household arts."

of vocational education. This division is in so great a degree a question of industrial education that the principles and methods worked out by the National Society for the Promotion of Industrial Education may be regarded as fundamental in its treatment. Substantially the following principles have been evolved by the national society and by State and local boards and agencies. An effective program of vocational education will cause an increase in the expenditure of public moneys for school purposes, for the following reasons:

1. More money will be needed to pay teachers, because those equipped with the desirable qualities and trade experience are now receiving in the trade a higher salary than has formerly been paid to teachers of such work.

2. This work demands selected teachers of experience and preparation in the trades.

3. Shops when operated in connection with the schools cause additional cost in equipment and maintenance. In some cases this may be partly offset by the production of articles in the shop.

4. Opening up new types of service to a group for whom as yet little or no provision has been made.

It may here be noted that the cost per pupil for training in the vocational schools is now somewhat higher than for training in the ordinary schools because of the added cost in teaching and equipment, as above stated. While it is yet too early to give accurate statistics, the fact remains and makes the need of added revenue more emphatic.

Many local communities are already burdened by the attempt to meet the demands which the present time is crowding upon the regular schools. In some towns and cities the added taxation can be undertaken only with great difficulty, if at all. Local communities are not willing, without State aid, to tax themselves for the purpose of training workmen who are extremely likely to drift off into other communities to raise the standard of citizenship and workmanship elsewhere.<sup>1</sup>

As far as the community is concerned, the necessary revenue to provide for vocational education may be provided for in two ways: First, by a redivision of the revenues of the community so as to give a larger proportion to vocational education. This method would, of course, diminish the portion devoted to cultural education. Second, the needed revenue may be secured by a special appropriation for vocational education in addition to the amount given for general education. This method, as has been said above, gives a greater burden than some communities with low value and taxable property and yet having considerable population can well bear. All authorities agree

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<sup>1</sup> Cf. Rept. of U. S. Com. on Nat. Aid to Voc. Educ., pp. 32-33.

in the wisdom and desirability of the plan generally followed in this country of a special levy for public-school purposes in the annual tax budget, the resulting revenue to be expended by the local school board for such kinds of education as the community demands.

Local resources are, therefore, upon the whole, insufficient for the desired expansion of vocational secondary education in the vocational lines that will provide training for thousands of young people in every State. For this reason the larger community, the State itself, must contribute to the expenditure. While this entering into partnership by the State is primarily to give financial aid and encouragement, it brings other advantages which are concerned with the general welfare of the State and individual in almost the same proportion as they are concerned with vocational education. It may well be borne in mind, however, that most effective results can be produced only when there is complete cooperation between the local community and the State, with the local community exercising its own initiative so far as may be possible. The following are the generally accepted reasons for aid by the State in establishing vocational education:

1. To encourage local communities to give specific vocational education as a new and needed kind of training, beneficial and desirable in the interest of the State as a whole.
2. To aid communities with their varying resources to provide effective vocational training.
3. To secure for the State the right to a reasonable participation or voice in the development of vocational education in the State.
4. To make it possible to secure a "State minimum of efficiency" in the conduct of vocational education.
5. To pay the just share of the State in a kind of education which, comparatively speaking, must be expensive, but which is of State-wide benefit.
6. To place upon the State a part of the cost of training "mobile labor."

The welfare of the community means the welfare of the State, and the need and value of cooperation in the widest possible extension of the new education are self-evident.

The amount of aid to be given by the State is, of course, the all-important consideration. It should be sufficient to induce local communities to get the work started and to justify reasonable voice by the State as the nonresident partner in the control and administration; but State aid should not be so much as to sacrifice local initiative and support, or that pride and interest which is characteristic of all people in the institutions that have grown out of their own planning and their own sacrifice. Up to this time the general method has been to let the local community furnish the plant and

equipment and pay approximately one-half of the operating expenses. The town or city should be required to show a need for the school and its interest in it by building and equipping the plant and paying half of the operating expenses, the State paying the other half. Another way is for the State to pay two-thirds of the salaries of all the teachers employed in the work, whether in trade subjects, or technical subjects, or such academic subjects as may be needed to complete well-rounded courses. Two-thirds of the salaries of the teachers is assumed to amount to practically one-half of the operating expenses. Under this plan of payment the State board of control is relieved of the difficulty of auditing the complicated accounts of the local communities. About all that is necessary under this plan is for the local authorities to make affidavit at the end of the year that they have spent so much money for instruction, or for teachers' salaries. On recommendation of the State board, after the work of the school has been approved, the aid should follow.

Payments to local communities should not be made automatically, but only with the approval and recommendation of the proper State board of control for work actually accomplished. The State is a different entity from any or all of the communities within it. The money in its treasury does not belong to the cities and towns, but to the citizenship of the State as a whole, entirely irrespective of the local boundaries. It should be spent by the State, not for the benefit of the local community, but for the best interests of the whole Commonwealth. The State should give money to the town or city in payment for a definite service—that of providing a good school giving a good training for good citizenship and good workmanship. Any locality should be entitled to its share of this money, not automatically as a right, but only when it has rendered the service for which the State has, through its law, agreed to pay. The State board of control should not only be charged with the duty and responsibility of finding out for the State whether or not any school is meeting reasonable standards of efficiency, but it should also be authorized to distribute money to the local community only after and not before the work has been accomplished.

The better plan seems to be to approve the school program in advance. For example, a full program for the work of a school is drawn up by a local board, in consultation with the State board, and is approved by the State board before being put into effect. This enables the State more easily to set a standard and to follow it up in the actual conduct of the school. It strengthens the bond of cooperation and interdependence between the State and the community. Financial aid is not given, however, until the work has been done.

In passing upon a school, a State board should have the power to go over every feature of its work, including all such items as location, equipment, courses of study, method of instruction, qualifications of teachers, and expenditure of money. In many of the States this is secured by a provision in the law giving the State power to approve the school, but leaving the latter free to operate according to its own discretion.

State-aided vocational schools should be free to all the people of the State. If State funds are to be used for their support, these institutions should be open to every child in every part of the Commonwealth. Each school must, of course, adapt itself to local needs and conditions. There might be a school at one point for one industry and other schools at other places for various different industries. In order that every one in the State may have a chance to prepare for the wage-earning occupation which he wishes to follow, a system of exchange of pupils should be put into effect in order to meet the case of pupils nonresident in a given community. Provision should be made by a contribution from the community in which he attends school, amounting, of course, to one-half the real cost of training.

This can be accomplished in two ways: First, the community in which the pupil resides may pay the community in which the pupil attends school the full cost for tuition of the pupil and later receive reimbursement from the State to the amount of one-half the expenditure; second, the community in which the pupil resides may pay the community in which the pupil attends school one-half the cost of such attendance. It would appear that from the standpoint of vocational education the first plan is preferable, inasmuch as all financial dealings would be carried on between the State and the individual community rather than between different communities, and further, that partnership of the State in vocational education would be continued.

Such method of interchange of pupils between communities would limit or reduce the number of vocational schools in a State, and would tend to lessen the per capita cost of training pupils. The total cost in plant and equipment, and the running costs, to be divided between the communities and the State, would be reduced. Cooperation, supervision, and the maintenance of a desired standard would be more fully assured.

State aid for vocational education in towns and cities has a foundation in theory and practice. Industrial welfare demands it, and the results already worked out give promise of better things to come.

A matter of considerable interest to this new movement in education, and a possible item of cost to the public, is the training of teachers for the vocational schools. Persons drawn from the trades and having trade experience only must be given further training



in related subjects and in the principles of teaching. They will be slow to do this at their own expense and loss of time. Such special preparation must largely devolve upon normal schools and upon towns and cities and States in the conduct of particular groups or classes of these new recruits to the teaching force. Pay must be made attractive and the means of entering inexpensive. Fortunately it may be said that several States are already taking progressive steps in the training of such teachers.<sup>1</sup> One of the most recent experiments along this line has been the attempt in Massachusetts to train teachers through evening instruction work to become instructors in the vocational schools of the State. Several classes of this kind were carried on in various centers of the State during the fall and winter of 1914-15. The results of this training will be seen in the work of the vocational schools in Massachusetts during the present and succeeding years. Hence, this may serve as a basis for future action in the training of teachers.

#### FEDERAL AID FOR THE STATES.

Federal aid is needed to provide the same stimulus to the States which the communities receive by State aid. The States in a sense are industrial and commercial unions competing in a friendly way with one another. The large argument in favor of national grants for practical education in the communities is that this Nation is an economic union. The markets of the world are open to the products of our industries, and therefore the National Government is interested in the industrial efficiency of every section of the country. If the Nation is to profit as a whole, then the Nation should provide the stimulus and support which would encourage the States to provide vocational education to increase the wealth.

The States are already burdened to their limit, in many cases, for general education.<sup>1</sup> There are also great differences among the States in taxing ability. New York, for example, has eighteen times the per capita wealth of Nevada. The burden of establishing industrial schools will fall very heavily on two types of communities or States—the rural community with scattered population, and the industrial center whose population increases rapidly and whose taxes increase in greater proportion than does the amount of taxable property. The Southern States, as a rule, are poor and will have a hard problem.

The problem transcends State boundaries, and is distinctly a national one. "A man may be born in Indiana, trained as a worker in Massachusetts, and later spend his days as a machinist in Cali-

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<sup>1</sup> The fundamental ideals involved in the training of teachers for vocational education were taken from the report of the commission previously referred to. Cf. pp. 75-76.



fornia.”<sup>1</sup> Twenty different States furnish the men for one construction concern in New York. This concern, again, does business in 12 different States. It is estimated that about 75 per cent of the workers in many cities were born and trained in other places than those in which they are working.<sup>2</sup>

The magnitude and importance of the subject as a national question is indicated by the fact that members of the Cabinet have interested themselves even to the extent of appearing before the commission on Federal aid favoring plans for national support. Hon. William C. Redfield, Secretary of the Department of Commerce, made an extended statement to the commission on May 8, 1914, in which he stated that he regarded the question of vocational education as being “the single, most serious subject affecting American life” which is under consideration to-day. He further stated that he believed that the problem is so large and covers so much ground that it should be dealt with by the greatest power in America. A statement was also made by Franklin B. Dyer, of Boston, April 30, 1914, to the effect that the stimulus which would come from Federal aid is a necessity in order to place squarely before the country at large the importance of vocational education, and further that there was no doubt that the Government could with propriety designate methods of expenditure of money raised by it.

There is abundant precedent for national aid to the States for vocational education, from the Morrill Act of 1862 to the Smith-Lever Bill of 1913.

One hundred and thirty million acres of lands, all told, have been granted to the States for common-school development. The income from these grants has exceeded \$600,000,000. This amount has been used largely for teachers’ salaries. These grants have been largest in the West, because of the setting aside of land by the Government for school purposes in each new State as it came into the Union from the Northwest Territory.

Under plans proposed by the vocational education commission large sums of money may soon be devoted annually by the Government to industrial schools. These may be allotted for the salaries of teachers in industrial, including agricultural, subjects; in the training of teachers for industrial, agricultural, and household economics subjects.

The device of the national grants to local districts has been in operation in England for nearly a century. From this experience there have been developed certain principles which are of special significance to legislation involving both State and Federal aid in

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<sup>1</sup> See Rept. of U. S. Com. on Nat. Aid for Voc. Educ., pp. 32-34.

<sup>2</sup> Rept. of U. S. Com. on Nat. Aid for Voc. Educ., App. I, p. 118, “Mobility of Labor.”

this country. English practice teaches us that the purpose of grants must be definite. The need for help in a community should be an actual need, grants should be fairly distributed, the amounts should be based on actual community expense, and they are to be granted only upon the maintenance of fixed standards of school efficiency and cooperation between the State and the school.

Sidney Webb, the best-known English writer on this subject, in his book, "Grants in Aid," tersely states some of the principles developed from English experience in the form of reasons for grants by the English Government to local districts as follows:

It has accordingly become an axiom of political science that, with our English administrative machinery, grants in aid of local governments are indispensable.

1. For an equitable mitigation of the inequalities of burden.
2. To secure effective authority for the necessary supervision and control of the National Government.
3. To encourage the kind of expenditure most desirable in the interest of the community as a whole.
4. To make it possible to attain to anything like a universal enforcement of the "National minimum" that Parliament has prescribed.

These reasons the English people have come to accept as the result of nearly a century of experience, and it is by far the best statement of principles and reasons for granting national aid which has come to our attention in the preparation of this report.

## II. VOCATIONAL EDUCATION SUPPORTED BY PRIVATE PHILANTHROPY AND CORPORATIONS.

Private philanthropy has its definite place in American life; that place is to do new things which need to be done, to blaze the trail, pioneer the way, and prove the need. The private school can always experiment, but can rarely consummate on a large scale. Schools carried on under public auspices can consummate, but can not generally experiment as satisfactorily. Vocational education, therefore, carried on by private funds should look to turning over to the public school the work and methods which it has proved worth while, and make these benefits available for larger groups. As a general thing, gifts to such work should have regard to the final outcome of their benefaction, which should be that of encouraging and stimulating the public to act on a wider and larger scale with public funds when the worth of that work has been proved. It is against good public principle to appropriate public money to private institutions in the control of which the public has no voice.

This division includes schools conducted by individuals, corporations, and institutions, some of which are of a permanent nature, to do the work which the public schools have failed to do or can not well do, especially in the case of older youth and young men

and women, and in the East much more than in the West. Typical examples are the North Bennet Street Industrial School and the Wentworth Institute, in Boston, and the apprenticeship school carried on by the General Electric Co., at West Lynn. Such schools set standards for the public vocational schools, and in a measure round out the system of industrial education. If they were conducted by the State and free to the people of the State, as in the West, they would reach thousands who can not now afford the expense of attendance.

Nor is there lacking evidence that such schools can be taken over by the municipal authorities and carried on successfully. There are already notable examples where this thing has been done; among others may be mentioned particularly the Boston Trade School, which was formerly carried on under private auspices, as was the Manhattan Trade School in New York, and the Milwaukee Trade School in Milwaukee, Wis.

### III. VOCATIONAL EDUCATION SUPPORTED BY JOINT AGREEMENT BETWEEN EMPLOYERS' ASSOCIATIONS AND LABOR UNIONS.

Formerly master and workman felt and discharged a common duty and responsibility for the training of workers, in order that the integrity of the craft might be preserved. Modern industry shows a decided tendency to throw the entire burden of expense and trouble of every kind on the schools. Part of this is, of course, due to the fact that the schools have not yet been able to present to modern industry a program of cooperation in vocational education which promises to be put into widespread use. It is certain that the school men can not solve this problem themselves. They must have the close and intimate help of employers and employees in the trades and other occupations dealing with the question. With the school authorities as a third party, an increasing number of employers and trade-unions will undoubtedly be willing to confer together upon ways and means by which they can aid the schools in the training of workers.

Matters which ultimately and vitally concern both the employer and employee are being dealt with by means of joint agreements, known in some industries as protocols. It has come to be recognized that in many industries, as in the case of the garment trades, the training of the worker should be as much a matter of trade agreement as hours of labor or scales of wages. Under the protocol a growing number of employers' and employees' organizations are finding themselves willing to recognize educational training and to go to the trouble to so organize the work as to offer their young workers time away from their employment for such training. Under such

private arrangements the vocations themselves must bear either all or a part of the cost. Shops must offer the opportunity for the shop training, leaving the schools to give related instruction; or, in many cases, shops and factories and commercial houses must provide facilities for classroom instruction under the roof of the plant. Some great industries, like the garment trade, draw together large numbers of workers in the unions having large resources. Employers and unions should be led wherever possible to undertake, to a large extent at least, the joint burden of responsibility concerning their own workers. The financing of such schemes should be in part by the workers and in part by the employers, and if in cooperation with the public schools, in part by the public, subject, of course, to such control and approval as is consistent with the expenditure of public money for educational purposes.

The population and industrial nature of a community determine the problem of local taxation for the support of industrial education, as has already been indicated; but State aid or National aid should be available to all communities, large and small, alike, upon the basis at present of local expenditure in proportion to the contribution which the community itself makes and the meeting of certain standards and conditions.

To recapitulate certain financial sources briefly, it may be said—

1. That some progress can be made in vocational education by saving effected by reorganization and readjustment in the present plan for education in the community, this to include a segregated budget of school expenditures. The relief afforded by this method will not be sufficient and will not greatly affect the general question. Nevertheless it is one of the methods by which waste may be avoided and the support of the public secured.

2. That in some instances increased taxation of the local community may be resorted to, but that the burdens thus placed upon the various communities will be onerous and unequal.

3. That the problem is State wide and even of national proportions. State aid for communities of varying needs and abilities, and national aid for States of varying economic conditions, are absolutely necessary for any large and lasting solution of the problem. Industrial and educational experience in this country and abroad justifies this point of view. This is the only nation-wide solution.

4. That much may be done by private philanthropy in experimenting, pioneering, and setting of standards.

5. That large communities may settle the question for large industries by educational, industrial, and trade-union cooperation and agreements.

The considerations which have arisen in discussing this problem of finance, as well as the considerations which have arisen in the other

chapters of this book concerning the work of vocational education in general, force upon us the conclusion that vocational education is bound up indissolubly with many other vital problems. Among these may be mentioned those which have to do with the efficiency of the workers on the one hand, and with the state of public opinion and the willingness of the public to sacrifice on the other; with the prosperity of the community and the State, as well as with the taxing resources of the community; with the general allotment of funds not only for general education, but for the other needs of the community; and with the methods of taxation in operation in a given State. These problems are all, to a greater or less extent, further complicated by the question of cooperation between worker and employer, by the traditions and methods in use in the great field of education, and by the general progress of industry.

From the fact that these problems are so intricate and subject to such sudden and unexpected changes, it is almost impracticable to suggest methods and plans for financing vocational education which shall meet all of the varying needs of the widely scattered communities in which it may be desired to introduce types of education to serve specific ends.

## Chapter IX.

### PROBLEMS OF VOCATIONAL EDUCATION.

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Vocational education in schools is of comparatively modern development, especially in other than professional fields. Hence, administrators still encounter a large number of unsolved problems. Furthermore, all education is still in prescientific stages of development; and in proportion as efforts are made to reach scientific stages, new problems are revealed in the fields of liberal or general education, which also affect vocational education. The object of this section is chiefly to attempt to analyze and give definite statement to some of these problems.

It is believed that every attempt looking to clearer analysis and definition of the problems of vocational education will hasten the day of experimental and other systematic attempts at the solution of these problems. This process of analysis and definition should be steadfastly opposed to the thinking in terms of "omnibus" generalizations that is so commonly characteristic of addresses and published articles dealing with the purposes and methods of vocational education. Definition, systematic organization of experience, experiment, measurement of results—these are some of the means by which education may be expected gradually to take its place among the departments of applied science.

#### I. THE RELATION OF GENERAL, OR LIBERAL, TO VOCATIONAL EDUCATION.

Problem 1. To what extent do studies designed for liberal education "function"<sup>1</sup> as to their content in various fields of vocational training?

For example, do Latin, ancient history, and algebra "function" at all in the training of the physician for his vocation? Do mechanical drawing and science "function" in the making of the bookkeeper? Does the study of music and art make any recognizable contribution toward the efficiency, on the vocational side, of the machinist, the farmer, or the cook?

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<sup>1</sup> The word "function" is used here in the sense that means and methods as adopted lead to results as intended. Studies, as well as methods of instruction, are means to ends; they "function" when the ends are realized as intended.



Problem 2. To what extent and in what way do studies in general or liberal education so "function" in mental training as to make important contributions toward vocational efficiency?

For example, does the study of mathematics contribute to the development of the mental powers requisite in the lawyer, the dentist, the music teacher, or the homemaker? Do the interests and types of appreciation develop in the study of literature "function" at all as valuable mental qualities in the training of the engineer, the house carpenter, or the clerk?

Problem 3. To what extent and under what conditions do various special types of vocational education so "function" as to result in the knowledge, appreciation, and ideals that are important in liberal education?

For example, in the case of a student who has studied little or no science, what will the vocational study of agriculture contribute as a by-product to his general insight into the applications of science? In what way will the study of teaching as a profession supplement deficiencies in liberal education? Will an effective program of vocational training for the house painter contribute materially to his general intellectual and esthetic development?

Problem 4. To what extent and under what conditions will systematic vocational education contribute, as regards mental training, to the ends that are valuable in general education?

In what ways, for example, does the close application to practice and theory required in the training of a printer develop such so-called general intellectual powers as attention, concentration, order, or the concentration and close thinking required on the part of a boy studying farming practically and theoretically result in the development of corresponding general mental powers? To what extent do the strong interests frequently evoked by vocational studies call into activity mental powers left inactive in general education?

Problem 5. To what extent is it expedient and desirable that the beginnings of systematic vocational education shall be postponed until after a definite degree of general or liberal education has been attained?

For example, if we assume that pupils are required to attend school until 14 years of age, is it expedient or desirable that from 12 to 14 a program consisting in part of vocational and in part of liberal education shall be made available? Is it practicable or desirable, in the case of youths from 14 to 16 who are to enter industrial callings at 16 years of age, to offer combined programs of liberal and vocational education prior to that age?

Problem 6. In case it seems desirable to divide the pupil's time at any given stage between vocational and liberal education, how shall the division be made?



For example, shall studies be alternated by hours, as in an ordinary commercial high school; that is, one period, perhaps, being given to algebra, another to stenographic practice? Or shall the day be so divided that one-half may be effectively given to concentration on vocational pursuits and the other half to general education? Or is a division on the basis of longer periods desirable; for example, one week being given to liberal education, another to vocational; or six months to liberal and six months to vocational education? Is a third program preferable, whereby the central part of each working day shall be given either to vocational or to liberal education, as the case may be, with the marginal part to the other type? For example, pupils might work from 8 to 3 o'clock on general studies (or vocational studies), and from 3 to 6 on vocational studies (or liberal studies). In practical life, it will be remembered, men usually pursue their vocations during the greater part of each working day, reserving evenings, holidays, etc., for recreational and cultural purposes.

## II. PROBLEMS OF SO-CALLED GENERAL VOCATIONAL EDUCATION.

It is contended that certain studies or practices serve as a basis for general vocational education; that is, presumably give fundamental elements needed in many callings.

Problem 1. To what extent are any of the studies usually found in a program of general education (excepting reading and writing) vocationally fundamental to a number of callings?

For example, it was formerly asserted that the study of Latin was vocationally fundamental to the subsequent study, for professional purposes, of law, medicine, theology, education, and botany. It has long been thought that the study of mathematics is vocationally fundamental, not only to the engineering professions, but also to law, medicine, and almost all other advanced pursuits. It is a widespread belief that mechanical drawing is fundamental, in a vocational sense, to industrial, agricultural, and perhaps even commercial pursuits. Again, there survives a belief that a program of vocational education might be devised which would train the so-called handy or all-round practical worker.

Problem 2. Does modern society present a general demand for the person who, while not exceptionally proficient in any calling, is ready and practical in many; for example, the man "handy" with tools, the "all-round" clerk, etc.?

Problem 3. What courses of practical instruction will train the "handy" man, as he is in demand, for example, in farming communities?

### III. PROBLEMS OF THE TRANSFER OF RESULTS OF VOCATIONAL EDUCATION.

Problem 1. To what extent and under what conditions do the results in skill, knowledge, appreciation, and ideals (or of practical experience in general) in one occupational field constitute an asset for entrance into another?

Problem 2. To what extent can the results in skill, knowledge, appreciation, and ideals (or of practical experience in general) obtained in one occupational field be utilized as a basis for systematic training toward another occupational field?

The following are examples of these problems: (1) To what extent does expertness in running constitute an asset in learning to swim? (2) To what extent can a thoroughgoing education in the practice of medicine be utilized when the doctor wishes to become a farmer? (3) How far can professional competency as a bookkeeper be regarded as an asset when the bookkeeper wishes to become a machinist? (4) If a man has been well trained as a machinist, to what extent can such training be drawn upon in equipping him to be a house carpenter? (5) A farmer's son "picks up" a great variety of vocational experience; to what extent does this constitute an asset when he wishes to become a physician, a locomotive engineer, a manager of an industrial enterprise?

(a) It is obvious that these problems are capable of being scientifically investigated as soon as psychology possesses the necessary tools. There exist now a large variety of popular beliefs or prejudices on the subject. For example: (1) Some vocational-school authorities believe that boys aged 16 or more, who wish to learn a trade, succeed much better if from 14 to 16 they have had a miscellaneous industrial experience as job workers in various unskilled or juvenile occupations. But effect of selection is obvious here, and probably deceptive. Only boys of exceptional character, probably, seek admission to industrial schools after such a period of miscellaneous experience.

(2) There is a widespread belief that the varied and often intensive experience obtained in farm life constitutes a valuable basis for almost any kind of subsequent employment.

(3) It is also believed in some quarters that persons who have for several years habituated themselves to a special line of manufacturing or commercial employment (for example, bookkeeping, shoemaking, draftsmanship, weaving) are permanently disqualified in large measure from taking up employment in other fields.

(b) Even superficial analysis will show that these problems must be approached with reference to particular types of qualities involved. For example, few people would assert that skill obtained

in playing baseball can be directly utilized in learning to swim. On the other hand, results of physical development, such as lung power, strength of arm muscles, etc., obtained in baseball may constitute a valuable asset in learning to swim. Again, the life of the farmer's son may give little direct preparation in skill or knowledge for the work of a physician, but, on the other hand, a general attitude toward work, a disposition to finish jobs once undertaken, an appreciation of the value of money or recognition resulting from successful work may in large measure be transferred.

(c) Much will depend, naturally, upon the relationship of the various occupations involved, according as these deal with similar working conditions, similar tools, identical materials, etc. One would expect a drill-press operator to bring to the work of the planer a variety of important assets, while one would not expect the bookkeeper to bring to house carpentry at least similar assets.

(d) It must be recognized that prolonged practice in any occupation may, in an important degree, disqualify the person for pursuit of another not related to it. The man who has followed farming for several years is in many respects disqualified to become a counter salesman of dry goods; the actor disqualified to become a farmer; the machinist to become a bookkeeper; etc.

(e) The question is an important one for several reasons. In the first place, there are many occupations which can not be entered upon in youth—for example, that of locomotive engineer. The locomotive engineer must have served in some other calling for several years, for which, presumably, he could have had systematic training. Will his previous experience as stationary engineer or as fireman constitute, in the long run, a sufficient preparation for his work as locomotive engineer? Again, systematic vocational education in schools for some occupations is easily possible; for others, extremely difficult. If a transfer can be easily effected, then we might train a person to be a house carpenter or a farmer, even though we knew that eventually he would follow the sea as a sailor or later work underground as a coal miner.

#### IV. THE PROBLEMS OF PROFESSIONAL EDUCATION.

The problems of professional education are in the main remote from the purpose of this paper. But one of general interest is that relating to the extent to which a program of professional training must base the so-called technical studies upon foundations of practical experience.

Problem 1. To what extent does effective vocational education for any profession require that the present order of studies which involves the giving of technical instruction in advance of practical

experience should be modified, or even reversed, to the extent that a certain amount of practical experience shall be taken perhaps at the outset and at intervals in the course of professional training?

For example, in the training of teachers it would be practicable, if desirable, to have a certain amount of practice teaching done at the very start as a basis for the subsequent study of methods, theory, etc. An engineering student might be given practical employment in something of an apprentice capacity along practical lines. A prospective physician might serve as a hospital orderly, nurse, etc., before completing his training.

Problem 2. (Undifferentiated professions.) To what extent shall training for professions which are not as yet clearly differentiated presuppose as a basis a complete professional training along the lines of professional training already established?

In the field of agriculture, for example, professional field of "administration of agricultural plants," "rural engineer," "rural journalist," etc., seem to be in process of differentiating. In medicine there is a demand for specialists in such fields as optometry, school physician, etc. In the commercial occupations, certain fields of expert inquiry, statistical work, and salesmanship seem to be assuming the proportions and standards of professions. In industry we have as yet no systematic training for the positions of foreman, overseer, and the like, except in very few fields.

(a) At present it is often assumed that before one may take up professional training in these undifferentiated or "nascent" professions, it is necessary that he should have a complete professional training along the established lines. This process, however, is costly, and it is a question whether the resources of the community or of the individual trained are always equal to it. The question of necessity must also be considered. For example, the school nurse and school physician represent distinct demands to-day in specialized fields for which it is doubtful if the historic training of the nurse and of the physician are at all necessary prerequisites. The professions of rural engineer and rural journalist may, on the other hand, be of such a nature as to require not so much a large amount of technical training in agriculture, as maturity and a wide range of experience, before they are taken up.

(b) To some extent the problem involved is one of maturity and experience, rather than the purely technical training of the person embarking in such work. Most directive or managerial positions require maturity and experience. It is quite probable that in some of these professional lines the ultimate solution will be that the person will take a definite amount of practical training for the historic occupation itself, and will then enter upon some field of practice with a view to returning, later, for advanced study toward mana-

gerial or other related work. It has been proposed, for example, that a school for the preparation of superintendents and principals of schools should presuppose perhaps five years of experience as teacher before systematic study for the administrative work is begun.

#### V. PROBLEMS OF INDUSTRIAL EDUCATION.

Because of the highly differentiated character of the trades and industries, a series of problems arise in industrial education which have not yet appeared in other fields.

Problem 1. To what extent and under what conditions shall training be given for highly specialized occupations in manufacturing and other related callings where so-called "unskilled" or specialized service is in large demand?

For example, in the manufacture of cotton and woolen cloth, the number of specialized occupations is now nearly 100. Some of these require little or no special training, and may be adequately supplied by the labor of children or women. In shoemaking, it is said that the number of specialized operations for each of which individual workers are specialized, reaches several hundred. Similar tendencies toward differentiation and specialization of occupation are found in the food-packing industries, iron and steel working industries, small hardware and jewelry manufacturing, printing and publishing, the building trades, transportation, and even certain phases of agriculture, such as sugar production, wheat-growing, etc. The building up of department stores, large jobbing houses, etc., in commerce increases also in a large degree specialization in salesmanship and clerical service.

(a) There is no evidence that the tendency toward extreme differentiation and specialization in occupational fields will be stayed. In proportion as economic units of production and exchange enlarge, supervision becomes more efficient, and mechanical devices are invented and improved, so, it would appear, in almost all occupational fields specialization and the relatively large employment of unskilled service seems to increase. The persistency of this tendency will depend upon the economic advantages resulting from such specialization.

(b) On the other hand, from the standpoint of the individual worker, serious questions as yet uninvestigated arise as to the psychological, moral, and physical effects of extremely specialized occupation. A large part of personal growth in character, physical powers, and probably also in mental capacity has always been dependent upon the occupation followed. Early specialization may result in a complete arrest of development in these lines.

It is probable, however, that specialization of occupation for one whose physical growth has been completed is much less dangerous



than for one still plastic. Hence, while extreme specialization for a worker at 15 years of age may give bad results, the same may not at all be true if the occupation is entered upon at the age of 22 or 23. This represents a promising field for further inquiry and investigation.

(c) In the meantime there are good grounds for urging that all persons be given an opportunity for systematic vocational education, either in some trade requiring various operations, or over a series of the special operations found in a highly specialized manufacturing or other economic process.

Problem 2. To what extent and under what conditions can training for foremanship be organized and conducted?

In almost all fields of organized industry the post of foreman, overseer, or other special director of groups of workers is clearly recognized. Such posts commonly require (1) the degree of expert knowledge of the occupation which a skilled worker is supposed to possess; and also (2) qualities not easily described, but related to leadership, capacity to direct workers, knowledge of human nature, organizing ability, etc.

(a) Foremen must combine, of necessity, native ability with a high degree of training; hence almost invariably these must be selected men who have had considerable experience.

(b) Experience does not suggest that industrial schools can train foremen, as such, economically. Young people from 14 to 20 years of age can hardly be selected with reference to their native ability to serve as foremen. Hence, training in the special lines of knowledge required for foremanship would be largely wasted. On the other hand, when skilled workmen are selected after several years of experience for positions of foremanship they often find themselves handicapped for lack of the technical knowledge which foremen should have.

(c) Probably the need should be met by (1) a systematic course, offered to all alike, toward the occupational pursuit itself, followed by (2) opportunities at evening schools and short courses for workers who have had a few years' experience in the industry, further to qualify themselves if they desire.

Problem 3. To what extent shall prolonged courses of industrial training be offered to girls in industrial and other occupational fields, who, in the main, will spend but from four to seven years in the occupation, after which they will take up home making?

The census of the United States shows that at the present time there are employed in this country a very considerable number of girls from 14 to 20 years of age. It is well known that the large majority, probably at least 90 per cent of these in the wage-earning callings, will take up homemaking as a career between the

ages of 20 and 27 years. The problem of the industrial training of these, therefore, involves, on the one hand, comparatively short courses of training, and, on the other, courses which will produce the maximum degree of efficiency in early stages.

Problem 4. Are there callings in industrial fields intermediate between those of a strictly professional nature, such as engineering, and those of a strictly trade nature, for which a large degree of technical instruction, as distinguished from practical training, is desirable?

It is sometimes alleged that there are such technical fields, for which, for example, the technical training offered in some of our high schools might be suited. Draftsmanship is sometimes alleged as an example, while in other fields such occupations as assaying, computing, and the like, may serve as examples. No sufficient analysis of these possibilities has yet been made.

Problem 5. What, at any given stage of vocational training for the industrial occupations, should be the proportion of time and energy of the pupil given, respectively, to technical instruction and to practical training?

Extreme and opposed examples of the problem under consideration are the following: (1) In the making of the machinist, a boy beginning at the age of 14 might devote his first two years very largely to such technical studies as drawing, mathematics, mechanics, and shop exercises, together with shopwork and shop English, and on the other hand give a minimum amount of attention to productive shopwork of a thoroughly practical nature. Between his sixteenth and eighteenth years the proportion of time given to his shopwork might be very greatly increased, with a diminution of the amount of attention given to technical work.

On the other hand, a program of training might be devised by which during the first year he might give from 60 to 80 per cent of his time to productive shopwork, with relatively only a small amount of technical instruction related to it. In his later years the proportion of time given to shopwork might be diminished, and the proportion of time given to technical instruction might be greatly increased.

The problem involved is not one merely for a given individual, but one which shall meet the requirements of the largest proportion of individuals as these present themselves for training. The first program might be the best for the person, if he could be found, who possesses inherent qualifications for foremanship; but it might prove exceedingly wasteful for that large majority of prospective workers in iron and steel who have little capacity for abstract thinking. The second program might prove much the better for the so-called "concrete-minded" people, and might also prove most effective for



those who were capable of surviving four or more years of training as given.

## VI. PROBLEMS OF COMMERCIAL EDUCATION.

The chief problems found in commercial education at the present time, apart from those involving its relationship to general education, are found in connection with the unanalyzed character of the occupations, from the standpoint of programs of commercial training.

Problem 1. To what extent should commercial occupations other than those of (a) accountancy and bookkeeping, (b) stenography and typewriting, be differentiated from the purpose of vocational education?

Statistics show clearly that in the commercial world approximately 80 per cent of the workers are found in fields of salesmanship, etc., as against 20 per cent in the specialized fields of accountancy, and stenography and typewriting. For the former occupations, however, little or no systematic vocational education is yet offered, in the main because requirements of these occupations that might be met by school vocational training have not been defined.

## VII. PROBLEMS OF HOMEMAKING EDUCATION.

The two chief problems connected with homemaking education at the present time are (a) those connected with the more effective coordination of that education with the home activities of the pupils and (b) those connected with the age at which it is efficiently practicable to begin systematic vocational homemaking education.

Problem 1. To what extent and under what conditions in a program of systematic vocational homemaking education can cooperation with the home be secured, and the equipment and facilities of the home be utilized for purposes of practical training?

(a) Every girl seeking a homemaking education must either live at home, in a school dormitory, or under other conditions involving a close contact with the various operations for which she is being trained. An efficient program of vocational homemaking education will involve the extensive use of the facilities thus offered.

(b) The problem presents different aspects, according as the vocational day school or the vocational evening school is under consideration. The principle is the same in both cases, however.

Problem 2. At what age is efficient homemaking education most practicable?

It is quite probable that there must be differentiation of groups for homemaking education, according to age as affected by the

occupations followed. For example, it may be doubted whether girls who from 14 to 21 years of age will be wage earners in occupations not related to the home, and who will be either living at home as boarders or in boarding houses, can efficiently respond to vocational homemaking education until somewhat late in their wage-earning careers. Again, when conditions of caste shall have been so changed that home employment on a wage basis shall be attractive, systematic vocational education for this might well be begun at 14 or 15 years of age. In the case of girls not contemplating wage-earning careers, but who design to remain at home, systematic vocational education might well take place during the high-school period.

#### VIII. PROBLEMS OF AGRICULTURAL EDUCATION.

Some examples now exist of successful programs of agricultural vocational education wherein the home farm is successfully combined with the school for instruction and for the direction of practical work. The two problems at present most pressing are (1) the provision of opportunities for practical training for city boys, and (2) the problem of combining secondary vocational agricultural education with preparation for higher institutions for the study of agriculture.

Problem 1. Under what conditions can boys living under urban conditions be provided with facilities for that portion of vocational agricultural education connected with practical work?

Experiments are being made in the direction of renting vacant land adjacent to cities for this purpose and putting boys in charge of their work on a project basis.

Problem 2. To what extent is it practicable for boys in the course of receiving a vocational agricultural education properly to qualify themselves for an agricultural college?

Obviously the requirements of an efficient vocational agricultural education are defined by the conditions of successful farming. It is not yet clear as to what should constitute the minimum requirements for admission to the agricultural college. Probably the college should distinguish in its work between degree work and courses of agriculture of a practical nature.

#### IX. PROBLEMS OF THE ADMINISTRATION OF VOCATIONAL EDUCATION.

The effectiveness of any form of vocational education depends largely upon the degree to which those directing it comprehend and respond to the practical requirements of the occupations for which training is being given. There arise, therefore, (a) problems as to

obtaining teachers who have had experience in the occupation for which training is being given; (b) problems of keeping these teachers in intimate contact with the practical requirements of these occupations; (c) problems of maintaining or providing, in connection with the executive authority in charge of the schools, specialists in vocational education; and (d) problems of providing, either in the legislative authority in charge of the schools or in an advisory relationship, representatives of the fields for which training is being given.

Problem 1. To what extent and under what conditions can teachers in vocational departments be equipped with practical experience obtained through actual participation in the callings for which they are giving education?

(a) Experience seems to prove that effective vocational education can only be given by persons who have had sufficient experience in a practical capacity, in a particular occupation, to enable them to succeed on a commercial basis.

For example, where normal schools undertake to train teachers for successful teaching (and not merely to teach prospective teachers certain subjects of study) experience seems to show that such teachers must themselves have been successful in the field of practical work. In medical colleges it is rare to find successful teachers who have not been commercially successful in practice. The best engineering teachers are those who have served some years at commercial work. In such trades as plumbing, pattern making, and others it is now agreed that a successful teacher must himself have reached a stage where he could readily procure profitable employment. The situation is not clear as regards commercial and agricultural teachers, but doubtless the same principles apply in these fields, as well as in homemaking.

(b) Granting the necessity of a considerable amount of practical experience on the part of teachers, the following are methods by which it could be obtained in conjunction with suitable training in the art of teaching: Vocational schools might take as teachers only persons who have already demonstrated their capacity in the world of practical effort, giving them in greater or less degree, just prior to their entrance on teaching, such training in the art of teaching as is practicable.

This method has been followed in the past by medical colleges, theological schools, and to some extent, engineering colleges and law schools. It is now followed by trade schools, and to a small extent, by schools of agriculture.

(c) A person seeking to become a teacher in a vocational field might take pedagogical courses, followed by a certain amount of practical experience as a prerequisite before taking up teaching.

This is the prevailing method in normal schools and in some engineering schools.

(*d*) A course of training might be devised whereby the prospective teacher would first take a course in a school looking toward teaching, followed by one or more years of practical participation in commercial work, this to be succeeded by a definite period of study of the art of teaching, preliminary to taking a teaching position. This method is now being proposed as a basis for the training of teachers of commercial subjects, etc.

Problem 2. To what extent and by what means shall teachers in vocational schools be required to keep in close contact with the occupational fields for which they are giving training?

It is probable that in fields like industry and agriculture and others where changes are taking place efficiency can be produced only by strongly requiring that teachers shall not only observe but actually participate, on a commercial basis, from time to time in the work in fields in which they are giving training. The most available means to this end would be periods of leave given from the school, during which teachers would participate in such work. This is now found in some engineering fields.

Problem 3. To what extent and by what means shall specialized direction be provided in the executive administration of vocational education?

(*a*) The problem is one affecting (1) the headship of a department; (2) the directorship of a vocational school; (3) the general supervision of vocational education in an administrative unit, such as a town or city; and (4) the administrative supervision of vocational education on behalf of the State, or other large unit of administration.

(*b*) It is assumed that the headship of a department must be in the hands of one who is a specialist himself in the occupation for which training is being given.

(*c*) The directorship of a large vocational school having several departments will probably not be in the hands of a specialist in any one department, but rather in the hands of one who is a pedagogical expert in many lines and a good administrator. Eventually, such a position will probably be filled by promotion from headships of departments, such selection being made on the basis of natural ability for an administrative position.

(*d*) There are good grounds for believing that in each city, or other administrative unit having many vocational schools, there should be an assistant superintendent specializing in the field of vocational education, including thereunder industrial, commercial, homemaking, and agricultural work offered, but not including professional. Whether he should also have supervision of the practical

arts work as a phase of general education or when offered prevocationally is doubtful.

(e) Similarly, where the administration of vocational education is supervised on behalf of the State there should be organized a separate department, dealing exclusively with vocational education.

Problem 4. To what extent and under what conditions shall representatives of the various vocational fields participate in the lay administration of vocational schools?

(a) It should be assumed that every single vocational department in a system should feel the influence of representatives of laymen in the occupational field concerned (including both employers and employees, where these distinctions are clearly defined).

(b) Obviously, it is impracticable to include laymen in this capacity in the school committee or board itself without making the latter unduly large. It may be assumed that a layman from one occupational field has no more capacity to assist in the administration of vocational education in another than any other layman.

(c) Experience seems to demonstrate that the more effective course is to place all vocational schools under the administration of the regularly constituted school authorities, because these are supported by public money, and to provide for each distinctive department a small advisory committee for the activity of which the department head shall be primarily responsible.

## APPENDIX.

### DIGEST OF LAWS OF STATES THAT PROVIDE STATE AID FOR A MORE OR LESS STATE-WIDE SYSTEM OF VOCATIONAL EDUCATION.

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#### INDIANA.

1. *Units of organization* are cities, towns, and townships.
2. *Types* are separate schools, regular day schools, part-time day, and evening schools or classes.
3. *Compulsory education* in part-time day schools, ages 14 to 16, 5 hours per week. But only when local communities have first established the school. The education is not compulsory upon all, as is the case in Wisconsin.
4. *Approved* by State board of education.
5. *Restricted* to such courses in part-time schools as are supplementary to regular employment.
6. *Established and maintained* by regular school authorities.
7. *Local board of inspection* is appointed by school board, ratified by State board of education. Three members suggested for each separate vocation taught.
8. *State reimburses* local communities maintaining regular day, part-time, and evening vocational schools and classes to the extent of two-thirds of net cost of maintenance, less tuition collected.
9. *State reimburses* local communities to extent of one-half amount expended for tuition.
10. *Age limits* are, for regular day and part-time day schools, 14 to 25.

#### MAINE.

1. *State aids* elementary schools teaching manual training and domestic science to the extent of two-thirds of the teacher's salary, not to exceed \$800 for each teacher.
2. *Approved* by superintendent of public instruction.
3. *State aids* secondary schools providing instruction in agriculture, domestic science, and mechanic arts to the extent of two-thirds of cost of instruction, but not to exceed \$500 to any district for any one year.
4. *State aids* certain selected vocational schools teaching agriculture, domestic science, manual arts and trades, to the extent of two-thirds of the cost of instruction, but not exceeding \$2,000 for any one district.

#### MASSACHUSETTS.

1. *Units of organization* are counties, cities, and townships.
2. *Types* are regular day, part-time day, and evening schools or classes.
3. *Compulsory education* in part-time day schools, ages 14 to 16, 5 hours per week. But only when local communities have first established the school. The education is not compulsory upon all, as is the case in Wisconsin.

4. *Approved* by State board of education.
5. *Restricted* to such courses in part-time schools as are supplementary to regular employment. Exception: Vocational courses for women in evening classes do not have to be supplementary to regular employment.
6. *Established and maintained* by regular school authorities or by *independent boards*.
7. *Local board of inspection* is appointed by school board and ratified by State board of education. Three members suggested for each separate vocation taught.
8. *State reimburses* local communities maintaining regular day, part-time, and evening vocational schools and classes to the extent of (a) one-half net cost of maintenance less tuition collected, (b) two-thirds net cost of maintenance for vocational courses in regular high schools maintaining agricultural courses.
9. *State reimburses* local communities to extent of one-half of amount expended for tuition.
10. *Age limits* are, for regular day and part-time day schools, 14 to 25 years; for evening schools, 17 or over.

#### NEW JERSEY.

1. *Units of organization* are county, joint county, districts, or union of districts.
2. *Types* are regular day, part-time day, and evening schools or classes.
3. *Not compulsory*.
4. *Approved* by State board of education.
5. *Restricted* to such courses in part-time schools as are supplementary to regular employment. Exception: Vocational courses for women in evening classes do not have to be supplementary to regular employment.
6. *Established and maintained* by regular school authorities.
7. *No local boards of inspection*.
8. *State reimburses* local communities maintaining regular day, part-time, and evening vocational schools or classes to the extent of one-half of net cost of maintenance, but not to exceed \$10,000 for any district, county, or joint district.
9. *Tuition reimbursed* to local communities to extent of \$25 through another act.
10. *No age limitation*.

#### NEW YORK.

1. *Units of organization* are cities and districts.
2. *Types* are regular day, part-time day, and evening schools or classes.
3. *Not compulsory*.
4. *Approved* by commissioner of education.
5. *Not restricted*. (See (5) other States.)
6. *Established and maintained* by regular school authorities.
7. *Local boards of inspection* are appointed by school board and ratified by State board of education. Two members suggested for each separate vocation taught.
8. *State reimburses* local communities maintaining regular day, part-time, and evening vocational schools and classes to the extent of (a) one-half of net cost first teacher, not to exceed \$1,000; (b) one-third of salary of all additional teachers. Provision is made for a pro rata distribution of part-time teachers in evening, part-time, or other schools.



9. *State reimburses* local communities through high-school act for tuition expended.
10. *No age limitations.*
11. Minimum of 15 pupils required for formation of class.

## PENNSYLVANIA.

1. *Units of organization* are districts or joint districts.
2. *Types* are regular day, part-time day, and evening schools or classes.
3. *Not compulsory.*
4. *Approved* by State board of education.
5. *Restricted* to such courses in part-time schools as are supplementary to regular employment. Exception: Vocational courses for women in evening classes do not have to be supplementary to regular employment.
6. *Established and maintained* by regular school authorities.
7. *Local board of inspection* is appointed by school board and ratified by State board of education.
8. *State reimburses* local communities maintaining regular day, part-time, and evening vocational schools and classes to the extent of two-thirds of cost of instruction, not to exceed \$5,000 in any one district for any one year.
9. *State reimburses* local communities for tuition to extent of \$25 per child through other act.
10. *No age limitations.*

WISCONSIN.<sup>1</sup>

1. *Units of organization* are school districts.
2. *Types* are all-day, part-day, and evening schools or classes.
3. *Compulsory education* in part-time day, ages 14 to 16, 5 hours per week.
4. *Approved* by the State board of industrial education, consisting of 9 members—3 employees, 3 employers, and 3 educators.
5. *All cities with 5,000 or more inhabitants* required to provide boards for industrial education; these boards to be appointed by the local boards of education, and to consist of 6 members—2 employees, 2 employers, the superintendent of schools, and the high-school principal.
6. *State aid provided* for four types—industrial, commercial, continuation, and evening schools.
7. *State reimburses* local communities maintaining above types to the extent of one-half expense of instruction, up to \$3,000 for each school maintaining all four types, but not to exceed \$10,000 to any one community.
8. *Employers must pay wages* to "permit pupils" for the five hours spent in continuation schools.

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<sup>1</sup> The Wisconsin laws covering this topic were not available, so this digest was gleaned from various secondary sources.



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Vocational survey of Richmond, Virginia, 103-110.











*6 Hollis*

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MONTHLY RECORD  
OF CURRENT EDUCATIONAL  
PUBLICATIONS

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# MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

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**CONTENTS.**—Publications of associations—Educational history and biography—Current educational conditions—Pedagogics and didactics—Educational psychology: Child study—Special methods of instruction—Special subjects of curriculum—Rural education—Secondary education—Teachers: Training and professional status—Higher education—School administration—School management—School architecture—School hygiene and sanitation—Physical training—Social aspects of education—Moral education—Religious education—Manual and vocational training—Vocational guidance—Agricultural education: School gardens—Home economics—Commercial education—Professional education—Civic education—Military training—Schools for maimed soldiers—Education of women—Negro education—Education of immigrants—Education of deaf—Exceptional children—Education extension—Libraries and reading—Periodicals represented in this number—Bulletin of the Bureau of Education.

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## NOTE.

The present issue of this record follows immediately that for May, 1916, publication having ceased during June, July, and August.

This office can not supply the publications listed in this bulletin, other than those expressly designated as publications of the Bureau of Education. Books, pamphlets, and periodicals here mentioned may ordinarily be obtained from their respective publishers, either directly or through a dealer, or, in the case of an association publication, from the secretary of the issuing organization. Many of them are available for consultation in various public and institutional libraries.

Publications intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

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## PUBLICATIONS OF ASSOCIATIONS.

- 759. Association of colleges and preparatory schools of the Middle states and Maryland.** Proceedings of the twenty-ninth annual convention, Philadelphia, Pa., November 26-27, 1915. Published by the Association, 1916. 108 p. 8°. (George W. McClelland, secretary, University of Pennsylvania, Philadelphia, Pa.)

Contains: 1. Isaac Sharpless: Military training in schools and colleges, p. 10-18; Discussion, p. 19-29. 2. Athletics in schools and colleges [by] D. A. Sargent, p. 30-41; [by] Walter Camp, p. 41-47; [by] J. E. Raycroft, p. 47-54; Discussion, p. 54-58. 3. R. B. Merriman: The use of the comprehensive examination in college education, p. 59-66; Discussion, p. 66-71. 4. Report of the committee appointed to investigate the comparative records made by students admitted to college on examination and on certificate, respectively, p. 75-94. 5. Bibliography: College admission: Examination vs. certificate system, p. 95-97.

- 760. Association of colleges and secondary schools of the Southern states.** Proceedings of the twenty-first annual meeting . . . Nashville, Tenn., October 28, 29, 1915. 84 p. 8°. (Walter Hullihen, secretary, University of the South, Sewanee, Tenn.)

Contains: 1. S. P. Capen: Measuring college standards and efficiency, p. 36-39. 2. Emily H. Dutton: Measuring college standards and efficiency, p. 40-51. 3. J. D. Elliff: The junior college: the Missouri plan, p. 52-54. 4. H. C. Tolman: Quality credits, p. 55-61. 5. L. R. Wilson: Southern high school libraries, p. 62-68. 6. C. G. Maphis: A plan for the definite rating of secondary schools, p. 69-73. 7. W. H. Hand: College credit for school work, p. 74-80.

761. **Carnegie foundation for the advancement of teaching.** Tenth annual report of the president and of the treasurer. New York City, 1915. 141 p. 4°. (Clyde Furst, secretary, 576 Fifth avenue, New York City.)

Contains: 1. The study of legal education, p. 21-30. 2. College charges for tuition, p. 38-45. 3. Pensions for public school teachers, p. 49-63. 4. Tabular statement of teachers' pension systems, p. 86-99. 5. Summary of teachers' pension systems, p. 100-102.

762. **Illinois state teachers' association.** Journal of proceedings of the sixty-second annual meeting . . . held at Springfield, Illinois, December 28-30, 1915. 189 p. 8°. (Robert C. Moore, secretary, Carlinville, Ill.)

Contains: 1. W. C. Bagley: The educational basis of democracy, p. 57-61. 2. W. S. Athearn: The religious education of a democracy, p. 61-63. 3. J. A. Clement: Survey report on student population and problems in Illinois high schools, p. 73-81. 4. Means and methods of classroom supervision [by] G. W. Gaylor, p. 103-5; [by] S. K. McDowall, p. 105-8; [by] L. A. Mahoney, p. 108-11; [by] J. O. Engleman, p. 111-15. 5. C. H. Johnston: Junior high school administration, p. 116-23. 6. D. M. Inman: The rural community as a subject of study, p. 135-41. 7. A. R. Warnock: The college athlete and summer baseball, p. 143-46. 8. B. D. Remy: Biography for religious instruction, p. 154-56. 9. L. P. Frohardt: State plans for religious instruction, p. 156-59. 10. R. V. Morgan: High-school music, p. 164-67.

763. **Iowa state teachers' association.** Proceedings of the sixty-first annual session . . . held at Des Moines, Iowa, November 4-6, 1915. Des Moines, R. Henderson, 1915. 209 p. 8°. (O. E. Smith, secretary, Indianola, Iowa.)

Contains: 1. H. B. Smith: The rural school, p. 5-10. 2. A. M. Deyoe: Educational needs and tendencies in Iowa, p. 11-21. 3. [Report of the committee on the elimination of obsolete and useless topics and materials from the common school branches] p. 23-73. 4. A. E. Craig: The college and its critics, p. 104-8. 5. G. S. Ford: Methods of socializing history, p. 115-24. 6. R. H. Whitbeck: The teaching of domestic geography, p. 126-32. 7. J. L. Cherney: Supervision of instructions, p. 132-37.

764. **National education association.** [Addresses delivered at the New York meeting, July 1916] School and society, 4 : July 8, 15, 22, 29, August 5, 12, 1916.

Contains: 1. D. B. Johnson: The rural home and the farm woman, p. 39-42. 2. Ella F. Young: The secular free schools, p. 77-81. 3. C. R. Van Hise: The place of a university in a democracy, p. 81-86. 4. W. J. Bryan: Citizenship in a republic, p. 86-88. 5. W. G. McAdoo: Some international aspects of public education, p. 88-93. 6. G. S. Hall: The war and some of its relations to education, p. 115-20. 7. C. G. Pease: The common school as an instrument of democracy, p. 120-23. 8. J. R. Kirk: The place of the normal school in a democracy, p. 123-27. 9. Samuel Gompers: The American school and the working man, p. 127-33. 10. Joseph Swain: Salaries and pensions, p. 135-54. 11. Clyde Furst: Teachers' pensions, p. 154-59. 12. J. D. Shoop: Vocational education, p. 165-68. 13. V. K. W. Koo: Chinese education, p. 191-94. 14. Fannie F. Andrews: What the public schools can do toward the maintenance of permanent peace, p. 194-97. 15. S. P. Duggan: Present tendencies in college administration, p. 220-35. 16. Beatrice Winsor: Functions and methods of boards of education, p. 235-38. 17. H. H. Seerley: National aid to vocational education, p. 238-42.

For a synopsis of the meeting and brief extracts from some of the addresses, see Journal of education, 84 : 61-69, 73-77, 87-97, 102-104, July 20, 27, 1916.

765. **New Jersey state teachers' association.** Annual report and proceedings of the 61st annual meeting . . . Atlantic City, N. J., December 27-29, 1915. Trenton, N. J., MacCrellish & Quigley co., 1916. 210 p. 8°. (H. J. Neal, secretary, Phillipsburg, N. J.)

Contains: 1. F. P. Graves: The evolution of educational method, p. 16-17. 2. J. G. Hibben: Sources of power, p. 18-24. 3. J. J. Savitz: Growth through supervision, p. 25-31. 4. Myra I. Billings: Supervision from the standpoint of the teacher, p. 31-34. 5. A. B. Meredith: Scientific measuring and testing of pupils, p. 35-38. 6. Z. E. Scott: How can the quality of supervision be determined? p. 40-45. 7. Fannie F. Andrews: The teacher and the world crisis, p. 47-51. 8. Mary E. Hall: The school and the library, p. 61-66. 9. Louise Connolly: The school and the library, p. 67-70. 10. Sarah B. Askew: Story-telling and its relation to library and school, p. 71-75.

- 766. North Carolina teachers' assembly.** Proceedings and addresses of the thirty-second annual session . . . Raleigh, November 24-26, 1915. Raleigh, Edwards & Broughton printing co., 1916. 347 p. 8°. (E. E. Sams, secretary-treasurer, Raleigh, N. C.)

Contains: 1. Mary O. Graham: The efficient school, p. 58-64. 2. Jessie Field: Leadership in the country, p. 64-68. 3. David Snedden: New problems in education, p. 68-70. 4. Anna Brochhausen: Story telling, p. 71-74. 5. Lella Cobb: The standards for measuring the efficiency of the primary teacher, p. 80-84. 6. R. E. Sentelle: An act for a uniform plan of examination and certification of teachers, p. 121-29. 7. Mrs. M. B. Terrell: The efficient teacher, p. 151-58. 8. J. H. Beach: The organization and management of the small high school, p. 159-68. 9. David Snedden: New problems in secondary education, p. 189-96. 10. T. E. Hollenbeck: The probable results of developing high schools that prepare directly for local industries, p. 202-204. 11. Frances Ray: The value of home economics in our schools, p. 205-11. 12. N. W. Walker: The present status of the high school sciences in North Carolina, p. 212-26. 13. C. M. Hutchings: The elective system in our high schools, p. 229-40. 14. H. S. Shaw: How can the boys be retained in our high schools? p. 241-44. 15. A. E. Winship: Music in public schools, p. 257-66. 16. R. H. Latham: The Gary schools: What lessons do they hold for the city schools of North Carolina? p. 277-85. 17. T. W. Andrews: Citizenship and play, p. 285-91. 18. E. C. Brooks: By what standard may a school board know the efficiency of the superintendent? p. 291-94. 19. N. W. Walker: The growth of farm-life schools, p. 310-16.

- 767. North Dakota education association.** Proceedings twenty-ninth annual session . . . held at Grand Forks, November 3, 4 and 5, 1915. Fargo, N.D., Walker bros. & Hardy [1916] 215 p. 8°. (W. E. Parsons, secretary, Bismarck, N. D.)

Contains: 1. A. G. Crane: Efficiency of schools, p. 27-34. 2. L. D. Coffman: Tradition and reform in education, p. 35-37. 3. W. F. Clarke: The obligations of the higher to the lower education, p. 41-47. 4. R. M. Black: Recent educational legislation in North Dakota, p. 48-52. 5. R. L. Finney: Social science in secondary schools, p. 56-61. 6. Effective methods of correlating high school work with every day life, p. 62-66. 7. Mrs. L. O. Middleton: Teaching of temperance hygiene, or the key to the situation, p. 72-77. 8. Clara M. Struble: The teachers' insurance and retirement law, p. 78-82. 9. R. A. Hatherell: School gardening, p. 83-88. 10. Frances Cowan: Playground possibilities, p. 94-97. 11. H. J. Hughes: The relationship of the common school to the college, p. 102-4. 12. J. E. Switzer: Methods and material in teaching physiography, p. 116-18. 13. P. H. Lehman: Shall we teach peace or war? p. 122-23. 14. W. H. Greenleaf: The relation of local history to the teaching of national history, p. 126-31. 15. V. E. Sayre: The adapting of manual training to rural conditions, p. 138-42. 16. M. C. James: Some ideals in secondary agriculture, p. 142-49. 17. Jean Porterfield: High school dramatics, p. 155-59. 18. F. H. Koch: A message from the committee on the improvement of American speech, p. 159-62. 19. C. C. Schmidt: The supervision of small school systems, p. 168-74. 20. F. L. Ralston: Differentiation in the courses of study for the grades, p. 179-82.

- 768. Ohio state teachers' association.** Proceedings . . . sixty-ninth annual session, Cedar Point, Ohio, June 27-29, 1916. Ohio educational monthly, 65 : 340-58, August 1916.

Contains: 1. R. L. Ervin: Every public school system should provide systematic and definite vocational training for its pupils in lines other than (in addition to) those that are clerical, commercial and secretarial, p. 347-55. 2. Wilson Hawkins: The six-six plan, p. 355-63. 3. U. L. Light: Resolved, that pupils should be allowed free election of studies in all grades above the sixth, p. 363-68. 4. R. W. Solomon: Departmental teaching should be deferred to the beginning of the tenth year, p. 369-75. 5. W. C. Bagley: Red letter lessons, p. 387-90. 6. The junior high school, p. 390-97. 7. Is it the function of the public school to be the social center of its community? p. 397-402. 8. Joint discussion: Systematic military training should be included in the courses of study required of all boys in all schools, above grammar grades, supported wholly or in part, by public funds, p. 403-8.

- 769. Pennsylvania state educational association.** Department of city and borough superintendents. Proceedings, thirty-sixth annual session, Scranton, December 28, 1915. Pennsylvania school journal, 64 : 437-60, April 1916.

Contains: 1. J. M. Howerth: Vocational guidance, p. 437-40. 2. S. E. Downes: Transportation and efficiency, p. 441-42. 3. J. M. Howerth: Caring for delinquents, p. 442-44. 4. P. M. Harbold: The grading of teachers, p. 445-48. 5. Landis Tanger: The grading of teachers as related to the improvement of teachers, p. 448-51. 6. H. P. Updegraff: Uniform records and reports, p. 451-56. 7. J. L. Eisenberg: Duties of the executive of school system, p. 456-58.

770. **South Dakota educational association.** Proceedings of the thirty-third annual session . . . held at Aberdeen, November 22-24, 1915. 479 p. 8°. (A. H. Seymour, corresponding secretary, Aberdeen, S. D.)

Contains: 1. W. F. Jones: Economy of time in education, p. 43-52. 2. E. C. Elliott: Measures of the worth of teachers, p. 55-62. 3. C. H. Lugg: Annual address of state superintendent of public instruction [Rural schools] p. 63-70. 4. E. C. Perisho: The vocational aspect of our problem of economy, p. 78-86. 5. H. M. Gage: Elimination of relatively useless material from the college curriculum, p. 105-13. 6. J. B. Heinmiller: Vocational guidance, p. 115-22. 7. A. M. Brace: The place of the newspaper and the news story in high school courses in English composition, p. 128-33. 8. J. T. Glenn: That same old problem, school legislation, p. 134-40. 9. Mrs. F. C. Huss: Preparation versus cramming for seventh and eighth grade examinations, p. 171-75. 10. Alta V. Brown: The teacher as a trainer, p. 176-80. 11. L. A. Fell: President's address [School hygiene] p. 205-10. 12. C. R. Goff: Our obstacles and how we may overcome them, p. 211-17. 13. T. A. Harmon: Wasted time—pupil, teacher and school board, p. 221-29. 14. H. C. Johnson: Vocational guidance, p. 230-34. 15. E. H. Warren: What we want and what we get, p. 235-44. 16. Herbert Patterson: Educational principles and the elementary school, p. 268-77. 17. Lida Williams: Play—purpose and practice, p. 278-85. 18. Miss Laurson: Teaching the pupils of the schools how to use the library, p. 320-24. 19. Nola Fromme: Home economics the meeting ground of the home and the school, p. 356-63.

771. **West Virginia education association.** Proceedings of the forty-fifth annual session . . . held in Charleston, W. Va., June 1915. Keyser, W. Va., The Mountain Echo, 1916. 300 p. 8°. (A. P. Morrison, secretary, Clarksburg, W. Va.)

Contains: 1. L. L. Friend: What can we do for those who drop out of school? p. 33-41. 2. W. M. Foulk: What should the community expect of the public schools? p. 42-49. 3. C. S. Crow: Cooperation between the school and community in cultivating an appreciation of literature, music and art, p. 50-56. 4. H. R. Bonner: Cooperation between the school and the shop or the office in vocational education, p. 56-70. 5. C. R. Murray: Newspapers, periodicals and theatres as educational agencies, p. 75-81. 6. W. S. Deffenbaugh: A wider use of the school plant, p. 81-102. 7. R. S. Gatherum: Civic education of the miner, p. 115-19. 8. B. H. Williams: What should the high school and the community expect of each other in the matter of co-operation, p. 122-26. 9. Mary R. M. McGuigan: Co-operative realizations and anticipations of our high schools with reference to the community, p. 129-34. 10. H. R. Bonner: Co-operation of the high school and the community through vocational guidance, p. 134-44. 11. C. L. Wright: The school and the community co-operating in the study and teaching of history and civics, p. 144-52. 12. J. A. French: The district supervisor as leader in managing the business affairs, p. 172-79. 13. E. B. Whaley: Athletics in the rural districts, p. 183-87. 14. Nell M. Barnett: Home economics in rural schools, p. 191-96. 15. S. S. Jacob: The teaching of manual training in rural schools, p. 196-203. 16. J. G. B. Coberly: Widening the scope of the school's influence, p. 211-15. 17. J. C. Timberman: The school and the community co-operating home gardens, p. 217-21. 18. W. W. Trent: Health work in the community, p. 227-34. 19. Ina G. Barnes: Class room method as a factor in community co-operation, p. 255-59.

772. **Wisconsin teachers' association.** Proceedings of the sixty-third annual session . . . held at Milwaukee, November 4-6, 1915. Madison, Wis., Cantwell printing company, state printer, 1916. 306 p. 8°. (M. A. Bussewitz, secretary, Milwaukee, Wis.)

Contains: 1. B. E. Nelson: A decade of educational progress in Wisconsin, p. 16-21. 2. J. W. Hudson: Democracy and education, p. 22-26. 3. Cora W. Stewart: Moonlight schools in Kentucky, p. 26-36. 4. H. W. Shryock: Education and peace, p. 37-46. 5. W. N. Ferris: Sanity in education, p. 46-55. 6. J. L. Elliott: Moral education, p. 55-61. 7. Ella L. Cabot: Moral teaching in schools, p. 64-73. 8. L. R. Gignilliat: Utilizing the military system for moral development, p. 73-81. 9. C. W. Wassam: Practical commercial geography, p. 116-20. 10. J. D. Shoop: The six and six organization of schools, p. 120-23. 11. J. D. Hudson: The high school and the community, p. 123-26. 12. H. M. Kurtzworth: Educational possibilities of the school publication, p. 161-66. 13. F. H. Gurtler: The training of stenographers, p. 183-88. 14. H. H. Hering: What should we teach in commercial arithmetic? p. 188-96. 15. R. S. Butler: Teaching the active end of business, p. 196-202. 16. Frederik Meyer: Expedients and supplementary reading in German in upper grades, p. 229-33. 17. C. H. Mills: Standardization [in music education] p. 253-60. 18. W. O. Miessner: A definite high school music course, p. 265-68. 19. S. D. Blanton: Incidence, cause and treatment of speech defects among school children, p. 273-84. 20. Margaret Wilson: America's opportunity—every schoolhouse a community center, p. 296-300.



## EDUCATIONAL HISTORY AND BIOGRAPHY.

773. **Chancellor, William E.** Jesus as an educator. *School journal*, n. s. 1 : 13-15, July 6, 1916.  
 "This is the second of a series of ten articles upon 'Jesus as an educator,' of which the first appeared in our issue of June 22. The purpose of the series is to show Jesus as the ideal teacher to whom all other teachers of all grades and kinds and subjects should look for light and direction."
774. **Decorme, Gerardo.** Catholic education in Mexico (1525-1912). *Catholic historical review*, 2 : 168-81, July 1916.
775. **Garrone, Tomás L.** La obra cultural del Dr. Zubiaur (sinopsis) a los sesenta años de edad y cuarenta de educador. Buenos Aires, Impr. "Damiano," 1916. 119 p. front. (port.) 8°. ♦  
 "Lista completa de las obras publicadas por el Dr. Zubiaur": p. 115-117.
776. In memory of Robert Curtis Ogden—true friend, patriotic citizen, unofficial statesman, Christian gentleman. Privately published, 1916. 55 p. illus., ports. 12°. Copyright by H. E. Fries. Preface by J. Y. Joyner.  
 Contains tributes to Mr. Ogden by prominent Southerners, including Commissioner P. P. Claxton.
777. **More, Paul E.** The old education and the new. *Nation*, 102 : 694-96, June 29, 1916.  
 A review of the educational labors of Henry Augustus Colt, first rector of St. Paul's school, Concord, N. H.
778. **Reville, John C.** De la Salle and popular education. *America*, 15 : 239-90, July 1, 1916.
779. **Stark, Herbert A.** Vernacular education in Bengal from 1813 to 1912. *Calcutta review*, no. 283: 25-75; no. 284 : 136-190, January, April 1916.  
 Contains chapters 1 to 5 of an elaborate work on native education in Bengal, India. To be continued.
780. **Visconti, Luigi.** La dottrina educativa di G. A. Fichte e i discorsi alla nazione tedesca. Firenze, B. Seeber, 1916. 118 p. 12°. Bibliografia: p. [107]-110.

## CURRENT EDUCATIONAL CONDITIONS.

781. **Bagley, W. C.** Some handicaps to education in a democracy. *School and society*, 3 : 807-16, June 3, 1916.  
 A paper read at a meeting of the Harvard teachers' association, Boston, March 11, 1916.
782. **Benson, Arthur C.** Education after the war. *Nineteenth century*, 79 : 1291-1306, June 1916.  
 "The problem must be to provide for special aptitude, and yet to retain a corrective; for scientific education must not lose sight of the human factor, humanistic education must not drift out of sight of facts."
783. **Bonner, Mary G.** What parents think of the Gary educational system. *Outlook*, 113 : 723-26, July 26, 1916.  
 An appreciation of the Gary system as exemplified in New York City.
784. **Bourne, Randolph S.** New York and the Gary system. *Educational administration and supervision*, 2 : 284-89, May 1916.  
 The writer says that after close observation for a year and a half he finds that the Wirt plan provides an organization more effective in administration, richer in curriculum and more economical in cost than any plan which the American public is likely to be able to finance for many years to come.
785. **Crozet, Paul.** La vie pédagogique, la guerre et la culture classique. *Revue universitaire*, 25 : 116-24, February 1916.  
 Gives the attitude of the French professors as opposed to the German professors in regard to the war and issues arising therefrom.

786. **Darroch, Alexander.** Education and humanism. *Hibbert journal*, 14:705-12, July 1916.  
The writer says that in addition to scientific education, Europe needs above all in the future "a liberal education—an education which will free men's minds from all narrow, petty, and national interests." To scientific education must be added moral and spiritual regenerating forces.
787. **Dealey, William L.** The theoretical Gary. *Pedagogical seminary*, 23 : 269-82, June 1916.  
This study is a digest of the Gary literature.
788. **De Grassi, G.** The educational system of Italy. *Cosmopolitan student*, 6: 150, 152-54, April-May 1916.
789. **Dewey, John.** American education and culture. *New republic*, 7 : 215-17, July 1, 1916.  
Speaks of public education as "the potential means for effecting the transfiguration of the mechanics of modern life into sentiment and imagination."
790. **Fuller, H. de W.** The Gary system. *Nation*, 102 : 698-99, June 23, 1916.  
A summary and a criticism.
791. [Gary plan] *New republic*, 7 : 219-23, July 1, 1916.  
Two appreciative articles on the Gary system: "The teacher and the Gary plan," by Elsa Neland; and "The meaning of the Wirt plan," by Alice B. Fernandez.
792. **Georgia. Department of education.** Educational survey of Monroe County, Georgia. By M. L. Duggan, rural school agent . . . Under the direction of the Department of education. [Atlanta?] 1916. 51 p. illus. 8°.   
No. 9 in a series of educational surveys of the counties of Georgia.
793. ————. Educational survey of Randolph County, Georgia. By M. L. Duggan, rural school agent . . . Under the direction of the Department of education. [Atlanta?] 1916. 29 p. illus. 8°.   
No. 8 in a series of educational surveys of the counties of Georgia.
794. **Grand Junction, Colo. Survey committee.** A survey of the city schools of Grand Junction, Colorado. District no. 1, Mesa county. Grand Junction, Colo., The Daily news press, 1916. 65 p. 8°.   
Survey committee: Frank L. Clapp, director of the survey; William A. Cook; Samuel Quigley, Ben Griffith, chairman; H. B. Jones, T. M. Todd.
795. **Hunt, Rockwell D.** The new education. *Western journal of education*, 22 : 12-14, June 1916.  
Address delivered before California Council of education, Southern section, November, 1915.
796. **Jardillier, Robert.** La guerre et l'enseignement littéraire. *Revue universitaire*, 25 : 258-64, April 1916.  
In conclusion the author states that the country demands a mobilization of all military, economic, moral, and intellectual forces, and that on the last point education contains all the resources necessary to answer the appeal.
797. **Johnston, Harry H.** The public service and education. *Nineteenth century*, 80 : 113-28, July 1916.  
A criticism of education as related to the public service of England. Argues against the classics.
798. **Liard, Louis.** La guerre et les universités françaises. *Revue internationale de l'enseignement*, 36 : 166-89, May-June 1916.  
"Conférence fait au Musée social."
799. **Lynch, Margaret.** Some weaknesses in grammar schools. *Optimist*, 2 : 178-82, May 1916.
800. **Mais, Stuart Petre Brodie.** A public school in war time. London, J. Murray, 1916. 164 p. 12°.   
Reprinted in part from the *School guardian*.

801. **Marriott, J. A. R.** The educational opportunity. *Hibbert journal*, 14 : 713-24, July 1916.  
Discusses educational policies as related to England. The character of English education.
802. **Mayo, C. H. P.** Educational reform. *National review*, 67 : 764-74, July 1916.  
Conditions in England. Criticises the classical ideals of the English secondary schools. Advocates more instruction in science.
803. **National association of corporation schools.** A report on public education. *Business journal*, 40 : 519-21, July 1916.  
Report submitted to the fourth annual convention of the National association of corporation schools at Pittsburgh, Pa., June 1, 1916.
804. **Newmeyer, W. H.** The inefficient child. *Pittsburgh school bulletin*, 9 : 265-70, June 1916.  
The assistant superintendent of a large store in Pittsburgh tells of his experience in dealing with children from 14 years of age and up. Describes the inefficiency of the boys and girls in his store in spelling, writing, arithmetic, etc.
805. **Sakamoto, K.** Japanese education of today. *Educational review*, 51 : 1-9, June 1916.  
Describes the Japanese school system; and incidentally the study of English.
806. **Samonati, Alfredo.** El organismo escolar americano. *Anales de instrucción primaria* (Montevideo, Uruguay) 13 : 179-335, July 1914-December 1915.  
Continues an article on same subject in the *Anales*, v. 10, p. 316-428.  
A survey of methods of instruction in various subjects, and of special features of organization, in the schools of the United States.
807. **Snedden, David.** An educational quest. *School and society*, 3 : 833-43, June 10, 1916.  
Remarks of Commissioner David Snedden on the occasion of a complimentary dinner tendered by the schoolmen of Massachusetts, May 19, 1916.
808. **Talbot, Winthrop.** The American illiterate. *World's work*, 32 : 303-5, July 1916.  
"The significant increase of illiteracy among the white immigrants of the north and west, and its decrease among every other class of people in the country."
809. **Thamin, Raymond.** L'Université de France et la guerre. *Revue des deux mondes*, 34 : 294-324, 587-618, July 15, August 1, 1916.  
Services rendered by the teachers of France to their country during the great war.
810. **Tobin, Richard T.** The aristocracy of the public school system. *Optimist*, 2 : 129-37, April 1916.
811. **Vincent, George E.** Education in the next generation. *Independent*, 86 : 512-15, June 26, 1916.  
Says that the Federal government will be compelled "to cooperate with the states in bringing about something like democracy in education throughout the nation."
812. **Willcox, William G.** What modern education means. *Journal of education*, 83 : 677-79, June 22, 1916.  
An address before the New York Board of trade stating the pressing needs in the administration of the New York schools.

## PEDAGOGICS AND DIDACTICS.

813. **Armani, T.** Posizioni nuove di vecchi problemi. Milano-Roma [etc.] Società editrice Dante Alighieri di Albrighi, Segati e c., 1916. xvi, 240 p. 8°.  
A collection of essays on educational and philosophical subjects, in which the author discusses pedagogy as a science, the principle of sufficient reason, the theory of knowledge, the unity of didactic processes, and some forms of home education.

814. **Averill, Lawrence A.** Back to Pestalozzi. Educational review, 51 : 10-20, June 1916.

The writer says that the great contributions of Pestalozzi to the teaching profession are as follows: (1) Natural education as opposed to formal instruction; (2) the significance of home education; (3) self-activity; (4) adaptation to the age of the child; (5) the psychology of individual differences; (6) beginnings of experimental psychology.

815. **Chapman, John Jay.** The schoolmaster. Atlantic monthly, 117 : 650-54, May 1916.

Says that the defect of American education is diffuseness; it ought to be met and corrected in every field of life. Commends the headmasters in private schools for having more freedom of action than "any other officers in the hierarchy of education."

816. **Davis, William Holmes.** Reprints of short articles on school matters. Danville, Va., The Danville school [1916] 24 p. 8°.

CONTENTS.—Public inspection of private secondary schools.—The growth and importance of the private boarding-school.—Planning for the future of private secondary schools.—University's obligation to future students.—Parents should visit schools before choosing.—Colleges and churches.—The private boarding-school as a community builder.—New Year thoughts about schools.—Biography in secondary schools.—The democracy of the private boarding-school.—What can a private school do?

817. **Goodrich, Henry W.** A suggestion for a cultural course. Educational review, 51 : 50-56, June 1916.

Writer says that the cultural course as now constituted does not produce a knowledge of the best that has been done and said in the world, but a "jumbled mass of uncorrelated matter."

818. **Jones, George Ellis.** Training in education. Pittsburgh, Pa., University of Pittsburgh, 1916. 113 p. 8°. (University of Pittsburgh bulletin. General series. vol. 12, no. 17.)

"A study of the basis, functioning, and examples of activity in learning."

819. **Kendall, C. N.** Two agencies in education of children—the home and the school. Child-welfare magazine, 10 : 324-27, May 1916.

820. **Keyser, Cassius J.** The human worth of rigorous thinking; essays and addresses. New York, Columbia university press, 1916. 314 p. 8°.

821. **Krebs, Henry C.** Reaching the children; a book for teachers and parents; with introduction by C. N. Kendall. New York and Chicago, The A. S. Barnes company [1916] vi, 127 p. 16°.

822. **Moore, Ernest C.** What is education? Education, 36 : 564-70, May 1916.

Says that education is "the process by which one learns to use his own mind in socially profitable ways in the making of his own knowledge."

823. **Prosser, Charles A.** Education as preparedness. School and society, 3 : 796-807, June 3, 1916.

An address before the Harvard teachers association, Boston, March 11, 1916.

824. **Russell, Bertrand.** Education as a political institution. Atlantic monthly, 117 : 750-57, June 1916.

The writer says: "The wish to preserve the past, rather than the hope of creating the future, dominates the minds of those who control the teaching of the young." Analyzes the existing systems of education, and calls for a reform.

825. **Tear, Daniel A.** Motor activity and elementary education. Educational bi-monthly, 10 : 444-52, June 1916.

826. **Vidari, Giovanni.** Elementi di pedagogia. Milano, U. Hoepli, 1916. 401 p. 16°.

827. **Wilson, H. B. and Wilson, G. M.** The motivation of school work. Boston, New York [etc.] Houghton Mifflin company [1916] ix, 265 p. 12°.

Designed to aid teachers in discovering problems and motives for the work that will make it appeal to and interest the pupil.

828. **Young, Ella Flagg.** Democracy and education. Journal of education, 84 : 5-6, July 6, 1916.

A discussion of Professor Dewey's book "Democracy and education."

**EDUCATIONAL PSYCHOLOGY: CHILD STUDY.**

829. **Arnold, Felix.** Weights and school progress. *Psychological clinic*, 10 : 33-39, April 15, 1916.

Gives tables showing with convincing regularity that the lighter pupil is the lower in his school grade.

830. **Bateman, W. G.** The ideals of some western children. *Educational review*, 51 : 21-39, June 1916.

Results of a study of 1200 children in the public schools of Missoula, Mont.

831. **Betts, George Herbert.** The mind and its education. Rev. and enl. ed. New York, D. Appleton and company [1916] xvi, 311 p. 12.

832. **Binet, Alfred and Simon, Th.** The development of intelligence in children (the Binet-Simon scale); tr. by Elizabeth S. Kite. [Baltimore, Williams & Wilkins company, 1916] 336 p. front. 8°. [Publications of the Training school at Vineland, N. J. Department of research, no. 11.]

833. ———. The intelligence of the feeble-minded; tr. by Elizabeth S. Kite. [Baltimore, Williams & Wilkins company, 1916] 328 p. illus. 8°. (Publications of the Training school at Vineland, N. J. Department of research, no. 12.)

834. **Birch, T. Bruce.** Standard tests and scales of measurements. *Psychological clinic*, 10 : 49-57, April 15, 1916.

A paper read before the Schoolmasters' club of Central Ohio.

835. **Bonser, Frederick C.** The selective significance of reasoning ability tests. *Journal of educational psychology*, 7 : 187-200, April 1916.

"To what extent do tests of reasoning ability enable us to predict the probable success of pupils in school? The author attempts to answer this question on the basis of a study of the school records of the 757 fourth, fifth, and sixth grade children tested in reasoning by the author nine years ago. Boys in the highest quartile of the reasoning tests have 3.5 as much chance of finishing the high school as those in the lowest quartile."

836. **Brown, H. A.** The significance of the measurement of ability to read. *Education*, 36 : 589-610, May 1916.

The aims dominating the teaching of reading should be: "(1) Teaching to read should mean teaching to read silently, *i. e.*, teaching to study efficiently. (2) Instruction at every step should be carefully adapted to the scientifically determined needs of individual pupils. (3) The teaching of reading should have for its aim to lead the child into an acquaintance with the world's best literature."

837. **Carey, N.** Factors in the mental processes of school children. *British journal of psychology* (London) 8 : 170-82, May 1916.

Part 3 of series. Deals with factors concerned in the school subjects.

838. **Freeman, Frank N.** Experimental education. Laboratory manual and typical results. Boston, New York [etc.] Houghton Mifflin company [1916] viii, 220 p. 12°. (Riverside textbooks in education, ed. by E. P. Cubberley.)

839. ———. The psychology of the common branches. Boston, New York [etc.] Houghton Mifflin company [1916] xii, 275 p. 12°.

840. **Gray, P. L.** Norms of performance in the fundamental processes of arithmetic. *Journal of experimental pedagogy and training college record* (London) 3 : 310-18, June 5, 1916.

Study made in schools of all grades and types of Leeds, England; 3,645 boys and 3,715 girls.

841. **Hall, G. Stanley.** The child from eight to twelve. *Mother's magazine*, 11 : 27-28, August 1916.

The characteristics, instincts, etc., of the child from eight to twelve.

842. Hannu, Paul H. Measuring progress in learning Latin. *School review*, 24 : 342-51, May 1916.

An effort to measure the growth of power in three elements of Latin assumed to be fundamental—vocabulary, translation, and grammar. Endeavors to ascertain what correlations exist between these phases of growth.

843. Heilman, J. D. Psychology in the schoolroom. *Journal of educational psychology*, 7 : 337-47, June 1916.

Read before the Superintendents' and principals' section of the Colorado state teachers' association, November 5, 1915.

844. Hill, David Spence. The practical in educational research. *Psychological clinic*, 10 : 65-70, May 15, 1916.

A paper prepared for the Round table of directors of educational research, Department of superintendence, National education association, Detroit, February 24, 1916.

845. La Rue, Daniel Wolford. Making the most of the children. New York, The Educational book company [1916] 135 p. 12°.

Seeks to answer the questions, How can we discover and develop the best that is born in our children and, How get them acquainted with their own futures?

846. Lewis, E. E. Testing the spelling abilities of Iowa school children by the Buckingham spelling tests. *Elementary school journal*, 16 : 556-64, June 1916.

Study of the spelling abilities of 8,624 Iowa school children in 10 cities, approximately 1,500 children in each grade from the third to the eighth inclusive. Author does not regard the results of his investigation as final.

847. MacDougall, Robert. Habit and the social order. *School and society*, 3 : 726-37, May 20, 1916.

An address before the New York Schoolmasters' Club.

848. Mead, Cyrus D. and Sears, Isabel. Additive subtraction and multiplicative division tested. *Journal of educational psychology*, 7 : 261-70, May 1916. .

Delivered before Section L of the American association for the advancement of science, December 20, 1915.

"In two second grade and two third grade classes preliminary tests were made to determine the abilities of the pupils in addition combinations. One second grade class was then taught subtraction for four months by the usual 'take away' method, and the other by the 'additive' method. The same procedure was followed with division in the third grade classes. The 'take away' method gave the better results in subtraction, and the 'multiplicative' method in division."

849. Mentality tests: a symposium. *Journal of educational psychology*, 7 : 229-40, 278-86, 348-60, April, May, June 1916.

850. Moss, Sanford A. Aptitude as a basis for education. *Engineering education*, 6 : 637-50, May 1916.

Discusses the subject "Should time be spent in study of a subject for which there is no aptitude, and which can give no direct benefit, for the sake of the indirect benefit in the way of culture, mind and will training?" Concludes that "aptitude is a real essential for successful use of a subject, and that no actual use can be made of a subject by an inapt person who attempts to make laborious study take the place of aptitude."

851. Pintner, Rudolf and Gilliland, A. B. Oral and silent reading. *Journal of educational psychology*, 7 : 201-12, April 1916.

"Eighty elementary pupils, from the third to the eighth grades, twenty high school pupils, and thirty college students were tested in both oral and silent reading. Pupils of the third and fourth grades do better in oral than silent reading, those in grades five to eight do about as well in either, while high school and college students do much better in silent reading."

852. Rugg, Harold Ordway. The experimental determination of mental discipline in school studies. Baltimore, Warwick & York, inc., 1916. 132 p. 12°.

"Selected bibliography": p. 117-120.

853. Starch, Daniel. A scale for measuring ability in arithmetic. *Journal of educational psychology*, 7 : 213-22, April 1916.

"This scale is designed to measure ability in arithmetical reasoning as shown in the solution of concrete problems, and is composed of a series of problems arranged in the order of steps of increasing difficulty. The value of the problems was determined experimentally by testing 2,515 children from grades four to eight."



854. **Terman, Lewis M.** The measurement of intelligence; an explanation of and a complete guide for the use of the Stanford revision and extension of the Binet-Simon intelligence scale. Boston, New York [etc.] Houghton Mifflin company [1916] xviii, 362 p. 12°. (Riverside textbooks in education, ed. by E. P. Cubberley.)
855. **Tidyman, W. F.** A descriptive and critical study of Buckingham's investigation of spelling efficiency. Educational administration and supervision, 2: 290-304, May 1916.
856. **Young, Herman H.** The Witmer formboard. Psychological clinic, 10 : 93-111, June 15, 1916.  
Bibliography: p. 110-11.
857. **Zeidler, Richard.** Tests of efficiency in the rural and village schools of Santa Clara county, California. Elementary school journal, 16 : 542-55, June 1916.  
The writer says: "The object of this study was to measure the results of arithmetic teaching in the rural and village schools of Santa Clara county, and to ascertain the status of such schools in the teachings of the fundamentals in arithmetic as compared with the work in localities where similar tests have been made."  
Contains statistical tables and graphs.

## SPECIAL METHODS OF INSTRUCTION.

858. **Ballard, Anna W.** The direct method and its application to American schools. Educational review, 51 : 445-56, May 1916.  
Advocates the direct method, because of the effect on the pupils. It holds their attention, arouses their interest and their ingenuity, and wakens their desire to excel.
859. **Bogardus, Emory S.** Education and motion pictures. Western journal of education, 22 : 18-19, May 1916.  
The extent to which motion pictures are used for educational purposes.
860. **Feasey, J. Eaton.** Open-air education: outdoor instruction for all schools. World's work (London), 28 : 54-62, June 1916.  
Practical suggestions for teaching various useful things: Water level and gradients; glasses and heat; direction and map making; sound waves and echoes; nature study and chemistry.
861. **Garrard, G. W.** The use of moving pictures in educational work. Wyoming school journal, 12 : 259-62, May-June 1916.  
Discusses the opportunities for good that lie in the proper use of moving pictures and the difficulties involved in the installation and operation of moving picture apparatus.
862. **Koch, Frederick H.** The amateur theater in the university. Quarterly journal of the University of North Dakota, 6 : 298-308, July 1916.  
An address delivered at the sixth annual convention of the Drama league of America, St. Louis, April 26, 1916.  
Tells of the work of the Little play house of the University of North Dakota.
863. **Kress, E.** De l'utilité du cinématographe dans l'enseignement. Paris, C. Mendel [1916] 32 p. 12°. (Bibliothèque de photo-revue.)  
On cover: Bibliothèque générale de cinématographie. no. 6, série rose.
864. **Wolgamott, Alberta M.** Moving pictures in industrial education. Manual training and vocational education, 17 : 745-49, June 1916.  
In this article Miss Wolgamott gives "a summary of the present situation with reference to the moving picture as a means in industrial education. She not only offers helpful suggestions to users of moving picture reels but makes clear certain limitations which are also important to keep in mind. The article looks toward the perfection of the moving picture machine and its wider use in education."



## SPECIAL SUBJECTS OF CURRICULUM.

865. **Archer, Richard L.; Owen, L. V. D., and Chapman, A. E.** The teaching of history in elementary schools. London, A. & C. Black, Ltd., 1916. 263 p. 12°.

866. **Association of history teachers of the Middle states and Maryland.** Proceedings of the meetings held in 1915, at Baltimore, Md., and Philadelphia, Pa. 126 p. 8°. (Edgar Dawson, secretary-treasurer, Hunter college, New York, N. Y.)

Contains: 1. R. W. Kelsey: Recent changes in the teaching of history in the universities and colleges of the Middle states and Maryland, p. 3-10. 2. D. C. Knowlton: Some recent changes in the teaching of history of the Middle states and Maryland, p. 11-22. 3. E. E. Giltner: A description of the changes in the teaching of history in the elementary schools from 1910 to 1915, p. 23-32; Discussion, p. 32-34. 4. J. M. Vincent: The literary recreations of the historical teacher, p. 35-53. 5. L. J. Hedge: The differentiation of history teaching in the elementary school, seventh grade, from that of the high school, senior class, illustrated by reference to the causes of the American revolution, p. 54-61. 6. W. E. Lingelbach: The content of the course in European history in the secondary schools, p. 80-87. 7. Helen L. Young: The content of the course in European history in secondary schools, p. 88-95. 8. A. C. Bryan: The content of the course in European history in secondary schools, with special reference to the influence of vocational education, p. 96-104; Discussion, p. 104-13.

867. **Ayer, Fred Carleton.** The psychology of drawing, with special reference to laboratory teaching. Baltimore, Warwick & York, inc., 1916. 186 p. 12°. Bibliography: p. 169-180.

868. **Baker, Franklin T.** Shakspeare in the schools. English journal, 5 : 299-309, May 1916.

Reprinted, with the permission of the author, from Shakspearean studies, by members of the English faculty of Columbia University; published by the Columbia University press.

869. **Beasley, E. Gertrude.** The reorganization of English in the elementary school. Elementary school journal, 16 : 565-70, June 1916.

Writer makes a plea for "direct emphasis on the laws and forms of expression."

870. **Bourgin, Hubert.** L'éducation dans et par les classes de français. Revue internationale de l'enseignement, 36 : 196-210, May-June 1916.

A discussion of the two problems in the educative value of teaching French, general and theoretical and special and practical.

871. **Brenna, Ernestina.** Metodologia dell'insegnamento storico con speciale riguardo alla scuola popolare. Milano, New York [etc.] F. Vallardi [1916] 216 p. 12°. (Biblioteca enciclopedica Vallardi. Biblioteca pedagogica.)

"Appendice bibliografica": p. [211]-216.

872. **Briggs, Thomas H.** General science in secondary schools. Teachers college record, 17 : 19-30, January 1916.

Also separately reprinted.

873. **Caldwell, Otis W.** Central association of science and mathematics teachers. Report of the Committee on a four-year high school science course. School science and mathematics, 16 : 393-99, May 1916.

Read before the Central association of science and mathematics teachers, Chicago, November 27, 1915.

874. **Davis, William Hawley.** Is debating primarily a game? Quarterly journal of public speaking, 2 : 171-79, April 1916.

Read at the third annual meeting of the New England oral English and public speaking conference, Cambridge, Mass., April 7-8, 1916.

Urges the necessity of improving debating ideals and practices, so that this important means of securing effective training in speaking may be rescued from the list of games and pastimes.

875. **Deihl, J. D.** A plan for handling advanced reading texts in modern foreign languages. *School review*, 24 : 359-64, May 1916.

Writer's plan consists of the following processes: (1) A natural unit of the text is read aloud in the foreign language; (2) the pupils prepare a list of the unknown words and expressions; (3) the pupils define the words written down; (4) the text is translated with the assistance of the completed list; (5) the unit is again read aloud in the foreign language.

876. **Fontaine, André.** Pour la raison, par le français. *Revue pédagogique*, 68 : 245-68, April 1916.

A discussion of the method of teaching the mother tongue to French children.

877. **Foucher, A.** L'enseignement de l'indianisme à Columbia university. *Revue internationale de l'enseignement*, 36 : 190-95, May-June 1916.

A highly complimentary description by a "visiting professor" of the division of Indo-Iranic languages of Columbia university, under the charge of Professor A. V. W. Jackson.

878. **Illinois music teachers' association.** Official report, twenty-seventh annual convention, Centralia, Ill., May 4-7, 1915. 146 p. 8°. (Herbert O. Merry, secretary-treasurer, Lincoln, Ill.)

Contains: 1. E. V. Tubbs: Music in the high school, p. 17-22. 2. Frederic Lillebridge: Psychology and pedagogy of music teaching, p. 42-53. 3. R. G. McCutchan: What the state board of education can do for the standardization of music teaching, p. 88-95. 4. J. L. Erb: The music teacher and standardization, p. 96-102; Discussion, p. 102-105.

879. **Lange, Alexis.** Literature as educational means. *English journal*, 5 : 371-78, June 1916.

Advocates the auxiliary use of books that may have "no claim to be classed with fine art but that are eye-opening, imagination-stirring, socializing records and interpretations of advancing thought in the realm of science, of politics, of social life in general."

880. **Lanson, Gustave.** Un jugement américain sur l'enseignement français. *Revue universitaire*, 25 : 166-71, March 1916.

A Review of Rollo Walter Brown's *How the French boy learns to write*.

881. **Lester, John A.** Teaching freshmen to spell. *English journal*, 5 : 404-10, June 1916.

882. **Lewis, E. E.** General science in Iowa high schools. *School review*, 24 : 426-35, June 1916.

Study based upon data obtained from replies to a questionnaire sent to the principals of the 345 accredited high schools, January 1916. Writer says the greatest need is for *information* rather than *training* in science. Instruction in science throughout the elementary school and high school should be general rather than special.

883. **McCrea, Nelson G.** The examinations in Latin of the college entrance examination board. *Classical journal*, 11 : 466-81, May 1916.

Presents statistical tables exhibiting the results for 1915 of the combined records of the candidates from 7 schools that send all, or practically all, of their pupils to the Board's examinations exclusively, with other statistics.

884. **Macleod, Mrs. Alice W.** Majors and credits in public speaking. *Quarterly journal of public speaking*, 2 : 149-52, April 1916.

Results of a questionnaire sent out to determine the relative place of the work of public speaking in the university curriculum and the credits allowed for such work.

885. **Mahy, M. Catherine.** The differentiation of English classes in the high school. *Education*, 36 : 375-80, May 1916.

Gives a course for foreign classes, planned for the schools of Providence, R. I.

886. **Miller, William T.** Education and peace. *Popular educator*, 33 : 486-87, 527, May 1916.

How geography, history, literature and religion can be utilized in educating for peace.

887. **Ohio history teachers' journal**, May 1916.

Contains: 1. History: the "Most useless subject in the curriculum." 2. "Telling the story." 3. Collateral reading. 4. Text books.

888. **Opdycke, John B.** New wine and old bottles. *English journal*, 5 : 392-400, June 1916.  
Gives a few of the new departures in the twentieth century teaching of English and pleads with the publisher for a new text-book.
889. **Pye, D. R.** Science and the public schools. *Nineteenth century*, 80 : 101-11, July 1916.  
Conditions in secondary schools in England. A plea for more and better science teaching.
890. **Rapeer, Louis W.** The outside of the cup: relative values in high-school English. *English journal*, 5 : 379-91, June 1916.  
Writer contends that "since most of our expression is oral expression, we should develop ability especially along this line."
891. Report of Committee of the New England association of teachers of mathematics on secondary school mathematics, April, 1916. *Mathematics teacher*, 8 : 191-218, June 1916.  
Selected references: p. 217-18.
892. Revised report of the biology committee of the National education association commission on the reorganization of secondary education, to be presented, after discussion and revision, to the reviewing committee of that commission. *School science and mathematics*, 16 : 501-17, June 1916.
893. **Sargent, Walter and others.** Course of study in art in the high school, School of education, the University of Chicago. *School review*, 24 : 409-25, June 1916.  
Gives outline of subject-matter in the general art course, and of course in survey of art.
894. ———. Course of study in drawing in the elementary school, School of education, the University of Chicago. *Elementary school journal*, 16 : 533-41, June 1916.  
Part 3 of a series of articles. Treats of methods and subject-matter, standards of attainment, etc.
895. **Scott, W.** Errors in arithmetic. *Journal of experimental pedagogy and training college record (London)* 3 : 296-307, June 5, 1916.
896. **Sherwood, Margaret.** The deserted temple. *Atlantic monthly*, 117 : 760-72, June 1916.  
A plea for humanistic studies. Describes the intellectual and spiritual experience derived from the study of literature.
897. **Small, Albion W.** Fifty years of sociology in the United States. *American journal of sociology*, 21 : 721-864, May 1916.  
Contains an account of the organization of instruction in the social sciences in the United States. In the section on Extra-academic organization for promotion of social science, the writer lists some of the better-known of these organizations in the order of their formation, also a list of journals devoted to social science.
898. **Taylor, Aravilla Meek.** The extent of adoption, and attitude toward general science. *School and society*, 4 : 179-86, July 29, 1916.
899. **Towne, Charles F.** The relative importance of oral and silent reading. *Education*, 36 : 571-74, May 1916.
900. **Tryon, R. M.** History in the junior high school. *Elementary school journal*, 16 : 491-507, May 1916.  
Presents a course of study in history and civics. Gives an interesting tabular view of history study in the junior high schools of the United States, and calls attention to the lack of uniformity in the matter of the grades composing such schools.
901. **Wesley, Charles H.** The problems of sources and methods in history teaching. *School review*, 24 : 329-41, May 1916.  
Writer says the method of many of our high school teachers is "detrimental to the growth of historical perspective or love of history in immature students." Discusses the equipment of the historical department.

902. West, O. P. Music in high schools, colleges, universities. *Southern school journal*, 27 : 10-15, June 1916.

Deals particularly with standardizing music instruction.

903. Winslow, Isaac O. How much mathematics should be required for graduation from high school. *Education*, 36 : 581-84, May 1916.

Writer says: "My answer, then, to the question proposed must be that as a universal requirement for graduation from high schools a full course of mathematics for one year should be sufficient."

904. Zick, Henry. The teaching of modern languages in European secondary schools. p. 488-510. 8°.

Reprinted from the *Educational review*, New York, May 1916.

Describes work in England, France, and Germany.

### RURAL EDUCATION.

905. Conference on rural education, State normal school, Worcester, Mass., April 28, 1916. [Papers] *Education*, 36 : 627-71, June 1916.

Contains: 1. M. S. Stone: The restoration of country life in New England, p. 630-33. 2. G. A. Works: The meaning of the rural school as the community center, p. 634-38. 3. David Snedden: Important lines of endeavor for community work in Massachusetts, p. 639-45. 4. C. C. Ferguson: The opportunity of the rural school for civic betterment, p. 646-49. 5. K. L. Butterfield: Rural school as a community center, p. 650-56. 6. H. A. M. Briggs: Rural reconstruction—experience in a Massachusetts community, p. 657-65. 7. E. J. Ward: The community secretary, p. 666-68. 8. H. O. Clough: Community activities and supervision of country schools in Connecticut, p. 669-71.

906. Johnson, T. J. Training rural students for rural life. *Southern workman*, 45 : 449-53, August 1916.

Work of the Woodstock training school, Lucy, Tenn.

907. Smith, Grace C. What can be done in the little country school? *Outlook*, 113 : 717-22, July 26, 1916.

Discusses consolidation, extension work, etc.

### SECONDARY EDUCATION.

908. Pennsylvania state educational association. High school department. Proceedings of annual meeting, session at Scranton, December 27-29, 1915. *Pennsylvania school journal*, 64 : 481-504, May 1916.

Contains: 1. A. S. Martin: A high-school day of six hours and directed study, p. 481-84. 2. D. R. Sumstine: A new system of grading to supplant the percentile method, p. 484-87. 3. S. C. Mitchell: Constructive citizenship, p. 487-89. 4. F. C. Henderschott: The corporation school, p. 490-92. 5. W. D. Lewis: The socialized high school, p. 492-95. 6. E. L. Whatenecht: Latin in its relation to English as a vocational subject in commercial education, p. 497-500. 7. Hazel L. Davies: Elimination of waste in Latin, p. 500-504.

(*Department of Rural Schools*, p. 504-20.)

Contains: 1. Anna Comstock: How nature study illuminates geography in the grades, p. 504-5. 2. E. E. Rahm: Rural schools as social centers, p. 505-8. 3. Florence Hocker: Plays and games for rural schools, p. 508-10. 4. Jessie Field: Leadership in the country, p. 510-12. 5. L. H. Dennis: The standard rural school, p. 512-14. 6. F. A. Christman: Adapting of the rural school to its environment, p. 514-16. 7. J. L. Randall: A neglected part of education of city child, p. 516-18. 8. Nellie S. Salton: Nature study and gardening, p. 518-20.

909. Colvin, Stephen S. Some needs of our high schools. *Education*, 36 : 551-57, May 1916.

Conditions in Rhode Island and elsewhere. The writer says that the teaching problem is "the final problem, and all educational reform must aim in the last analysis at securing better teaching. The immediate question of the improvement of secondary teaching should be undertaken in a large measure by the teachers themselves."

910. **Davis, C. O.** North central secondary schools. *School review*, 24 : 435-49, June 1916.  
Presents data for judging the character of work of the various schools accredited by the North central association of colleges and secondary schools.
911. **Judd, Charles H.** The qualitative definition of high-school units. *School and society*, 3 : 649-58, May 6, 1916.  
Address delivered on April 14, 1916, before the Conference of the University of Chicago with affiliated secondary schools.
912. **Minnesota. Department of education.** The junior high school problem. A report prepared for the State high school board by E. M. Phillips and C. H. Barnes. 1916. 25 p. 8°. (Bulletin no. 59)
913. **Nutting, H. C.** The curriculum of the secondary school. *School and society*, 4 : 42-49, July 8, 1916.  
Criticism of some of the ideas of Dr. Flexner as expressed in "A modern school," and the ideas of Prof. Rapser, in *School and society* for April 15, 1916, on College entrance requirements.
914. **Prunty, M. C.** Factors, other than the curriculum, determining the success of the junior high school. *American school board journal*, 52 : 11-12, 80, June 1916.  
This paper was read before the thirteenth annual conference of the Kansas high schools, Lawrence, Kansas, March 18, 1916.
915. **Russell, William F.** Economy in secondary education. Boston, New York [etc.] Houghton Mifflin company [1916] viii, 74 p. 12°. (Riverside educational monographs, ed. by H. Suzzallo)
916. **Snavelly, Guy E.** The junior high school and the college. *Educational review*, 51 : 40-49, June 1916.  
Advocates adapting the curriculums of the junior and senior high schools so that two years would be sufficient for the normal student now requiring three to complete the seventh, eighth, and ninth grades.

#### TEACHERS: TRAINING AND PROFESSIONAL STATUS.

917. **North central council of state normal school presidents.** Synopsis of papers read at the meetings held February 18-19, 1916, Chicago, Ill. *Minnesota state normal schools quarterly journal*, 1 : 49-58, April 1916.  
The general theme of the meeting was "Greater educational leadership for state normal schools."
918. **Bulifant, Blanche Virginia.** Establishing a closer relationship between the work of the normal school and that of the training school. *Educational conference*, 2 : 1-6, May 1916.  
Gives some of the means of bringing about closer relationship between the normal school and the training school and so preventing waste.
919. **Chamberlain, Arthur Henry.** Organization for effectiveness. *Sierra educational news*, 12 : 344-50, June 1916.  
The California teachers' association and the California council of education, their history, organization and what they have accomplished.
920. **Chambers, Will Grant.** The obligations of the school of education to its mature, irregular students. *School and society*, 3 : 763-75, May 27, 1916.  
Discusses methods of admitting to college and schools of education mature teachers lacking full entrance requirements and the granting of degrees to such irregular students.
921. **Corbett, Henry R.** Pensions for teachers. *American school*, 2 : 170-72, June 1916.
922. **Corson, O. T.** Ph. D.'s and teachers. *Ohio educational monthly*, 65 : 195-98, May 1916.

923. **Gaw, Allison.** The collegiate training of the teacher of high-school English. English journal, 5 : 320-31, May 1916.  
Contains a five-year collegiate course for preparation for the teaching of English in the high school.
924. **Jessup, Walter A.** The teaching staff. Cleveland, O., The Survey committee of the Cleveland foundation, 1916. 114 p. 12°.  
One of the 25 sections of the report of the education survey of Cleveland conducted by the Survey committee of the Cleveland foundation in 1915.
925. **Judd, Charles H.** The professional significance of appointments by teachers' agencies. Sierra educational news, 12 : 331-33, June 1916.  
The writer believes that ultimately the teachers' agencies will be absorbed into state departments of education or into state teachers' associations.
926. **Kline, Linus W.** What phases of psychology should be taught in normal schools and what amount of time should be devoted to the subject? Minnesota state normal schools quarterly journal, 1 : 58-59, 64-68, April 1916.
927. **Lavarenne, Maurice.** A great French school in the war. Yale review, 5 : 758-74, July 1916.  
Part played in the Great War by the students of the École normale supérieure.
928. **Maxwell, C. R.** Relation of the normal school to its graduates in the public school. School and society, 3 : 918-31, June 24, 1916.  
Advocates a closer cooperation between the normal and the public schools.
929. **Pritchett, Henry S.** A comprehensive plan of insurance and annuities for college teachers. New York city, Carnegie foundation for the advancement of teaching, 1916. xix, 67 p. 4°. (Bulletin no. 9)
930. Self-directed teaching. School journal, n. s. 1 : 6-8, 16-17, June 8, 1916; 1-5, July 6, 1916.  
The second and third of "a series of twelve articles for general reading and for teachers' reading circles, designed to help experienced teachers to develop larger freedom in teaching and to train young teachers in self-reliance in the classroom. The first article was printed in the issue of May 18, 1916."
931. Teaching and the teacher. Utah educational review, 9 : 5-15, June 1916.  
The case for the teacher and his calling. Presented as the record of a Conference of the editors of the Review and others, May 19, 1916.  
Contains: 1. What teaching is. 2. Conditions governing the teacher's work. 3. Occasion for a hopeful outlook. 4. What constitutes good instruction.
932. **Thomas, A. O.** A more reasonable basis for the certification of teachers. Better schools, 2 : 133-37, June 1916.  
The writer says that the teachers' examination affords no clue to a number of qualities and traits of character essential to successful teaching. Advocates more rational means of selecting teachers.
933. **Thomas, W. Scott.** Are there too many high-school teachers in California? School review, 24 : 365-74, May 1916.  
Says there is no oversupply of high-school teachers in the state, but there is some lack of individual adjustment which at times causes personal hardship.
934. **Walker, J. T.** The teacher in politics. Virginia state teachers quarterly, 2 : 81-86, May 1, 1916.  
How the teacher can improve politics by imparting lofty ideas of citizenship and of office-holding to both his pupils and to his community, and by aiming to bring to the public view those moral qualities necessary for all leadership, if government is to be safe, beneficent, and patriotic.
935. **Winsor, Frederick.** The underpaid pedagogue. Atlantic monthly, 117 : 654-57, May 1916.  
Writer says that the trouble with the profession is that there are no prizes in it. Cites the salaries received by several headmasters in England, which are far in excess of those paid in this country.



## HIGHER EDUCATION.

936. **American association of collegiate registrars.** Proceedings of the sixth annual meeting . . . University of Michigan, Ann Arbor, April 20-22, 1915. 62 p. 8°. (Ezra L. Gillis, secretary-treasurer, University of Kentucky, Lexington, Ky.)  
Contains: 1. G. W. Cram: Freshman dormitory scheme at Harvard university, p. 11-16. 2. L. A. Kalbach: Report of committee on uniform statistics, p. 16-20. 3. Walter Humphreys: The course in business administration at the Massachusetts institute of technology, p. 30-35. 4. A. W. Tarbell: A bachelor of arts course in the drama, p. 41-45. 5. Lella G. Hartmann: The co-operative engineering course in the University of Cincinnati, p. 46-52.
937. **American association of university professors.** Report of the committee of inquiry on the case of Professor Scott Nearing of the University of Pennsylvania. 57 p. 8°. (Bulletin, vol. 2, no. 3, pt. 2, May 1916)
938. **Association of American universities.** Journal of proceedings and addresses of the seventeenth annual conference, held at University of California, August 27-28, 1915. 72 p. 8°.   
Contains: 1. John Dewey: Faculty share in university control, p. 27-32; Discussion, p. 32-39. 2. A. O. Leuschner: The organization and budget of the graduate school and its relation to the other schools of the university, p. 40-49; Discussion, p. 49-57. 3. C. D. Marx: Questions relating to outside remunerative work by professors, p. 57-64; Discussion, p. 64-66.
939. **Bornhak, Conrad.** Les étrangers dans les universités allemandes. *Revue de l'enseignement des langues vivantes*, 33 : 65-67, February 1916.  
Translation of an article in the *Berliner lokal-anzeiger*, June 15, 1915.
940. **Butler, Nicholas Murray.** A voyage of discovery. *Scribner's magazine*, 59 : 693-702, June 1916.  
Narrates the experiences of the writer as a student in Berlin and Paris.
941. **Carpenter, William H.** Function of graduate schools in the universities of the United States. *Educational review*, 51 : 433-46, May 1916.  
Says that the graduate school is "a vivifying force, not alone to the university of which it is a part, but also to the whole system of education upon which it is based."
942. **Clark, Thomas Arkle.** The fraternity and the college; being a series of papers dealing with fraternity problems. Menasha, Wis., The collegiate press, G. Banta publishing company [1916] 223 p. 12°.
943. **Elliott, Edward C.** Inaugural address of the chancellor of the University of Montana (1916) *School and society*, 3 : 909-18, June 24, 1916.  
The ends which a university serves in a community.
944. **Les étudiants étrangers dans les universités allemandes.** *Revue de l'enseignement des langues vivantes*, 33 : 213-16, May 1916.  
Gives the resolutions adopted by a committee of the students of the University of Berlin in regard to the attendance of foreign students at the German universities.
945. **Felmley, David.** What is a reasonable limit to which an institution may go in enrolling students in the first and second years, and yet retain the right to be classified as a senior college? *American school*, 2 : 101-104, April 1916.  
Read before the North central association of colleges and secondary schools, Chicago, March 24, 1916.  
Discusses the measure intended to shut out normal schools from the training of high-school teachers—the proposed classification of colleges according to percentage of senior college students.
946. **Foster, William T.** Faculty participation in college government. 5 p. 8°.   
Reprinted from *School and society*, 3 : 594-99, April 22, 1916.  
Plan of college government adopted by Reed college.



947. **Goodspeed, Thomas Wakefield.** A history of the University of Chicago . . . the first quarter-century. Chicago, Ill., The University of Chicago press [1916] xvi, 522 p. illus. 8°.
948. **Green, Edwin L.** A history of the University of South Carolina. Columbia, S. C., The State company, 1916. 475 p. illus. 8°.
949. **Hinchman, Walter S.** Where the college fails. Educational review, 51: 57-70, June 1916.  
Deprecates the lecture and recitation methods of teaching, and advocates the "productive idea." The idea is based on "the fundamental principle that growth depends on production assumes merely that the student shall produce while he is learning."
950. **Jordan, David Starr.** A quarter century of Stanford. Stanford alumnus, 17 : 339-49, May 1916.  
Commencement address, May 22, 1916.  
An account of the past twenty-five years of Stanford University.
951. **McArthur, C. G. and C. B.** The menace of academic distinctions. Scientific monthly, 2 : 460-66, May 1916.  
Discusses the snobbishness of academic distinctions—titles and honors and position, etc. Says the academics are "fostering the ideal of an intellectual aristocracy," which makes for inefficiency in a teacher.
952. **McConaughty, James L.** Dartmouth and the schools. Education, 36 : 558-63, May 1916.  
Discusses the "new Dartmouth admission plan," which, as the writer states, is not really an admission scheme at all. The innovation is in the method of selecting the schools that shall be upon its approved list.
953. **McDermott, Edward J.** The proposed national university. Catholic educational association bulletin, 12 : 16-32, May 1916.  
Reprinted from America by permission.  
Discusses two questions—first, would an act of Congress establishing a National University be valid under the Constitution; second, would this act be wise and expedient, granting its constitutionality.
954. **Mathews, Mrs. Louis K.** Raising the standards of intellectual life. Journal of the Association of collegiate alumnae, 9 : 69-76, May 1916.  
Shows in what ways the administration, the faculties and the students can raise the standard of intellectual life in the university.
955. **St. Lawrence university. Class of 1916.** Sixty years of St. Lawrence. Published by the class of 1916. Canton, N. Y., St. Lawrence university, 1916. 375 p. plates. 8°.
956. **The teaching function of the college.** School journal, n. s. 1 : 10-12, June 8, 1916.  
The second of a series of articles in which will be presented some views of colleges and universities of America.
957. **Whitney, Willis R.** Research as a national duty. Science, n. s. 43 : 629-37, May 5, 1916.  
Emphasizes the importance of material research. Colleges and universities of the United States not doing their full duty in this respect.
958. **Wickham, Joseph Francis.** Going to college. America, 15 : 141-42, 165-66, 193-94, May 20, 27, June 3, 1916.

## SCHOOL ADMINISTRATION.

959. National education association. Department of superintendence. Proceedings . . . at the annual meeting; held at Detroit, Mich., February 21-26, 1916. Published by the Association, 1916. 220 p. 8°.

Contains: 1. S. S. Marquis: The Ford idea in education, p. 20-27. 2. Debate: the best organization for American schools is a plan which shall divide these schools into six years of elementary training and six years of secondary training [by] C. H. Judd, p. 27-35; [by] C. G. Pearce, p. 35-44. 3. J. G. Becht: The public school and the new American spirit, p. 45-50. 4. T. W. Churchill: The superintendent as the layman sees him, p. 50-55. 5. G. C. Creelman: Some suggestions for improving the rural-school curricula, p. 57-63. 6. The minimum essentials versus the differentiated course of study in the seventh and eighth grades [by] L. D. Coffman, p. 63-68; [by] W. C. Bagley, p. 68-75; [by] David Snodden, p. 75-86. 7. O. T. Corson: Booker T. Washington—an appreciation, p. 93-98. 8. J. H. Francis: High points in the Los Angeles plan, p. 98-103. 9. L. P. Ayres: Significant developments in educational surveying, p. 104-11. 10. A. D. Yocum: Definiteness and compulsion in education, p. 114-18. 11. Alice M. Carmalt: Manners and morals—our problem, p. 118-21. 12. J. E. West: Scouting as an educational asset, p. 122-29. 13. Milton Fairchild: The national morality codes competition, p. 129-35. 14. Edward Hyatt: How not to train rural teachers, p. 135-38. 15. A. C. Monahan: The status and need of rural supervision, p. 141-46. 16. H. S. West: A first step in establishing the six-three-three organization, p. 146-52. 17. R. F. Crist: The education of foreigners for American citizenship, p. 155-58. 18. F. M. Hunter: Community activities as a means of motivation, p. 159-65. 19. J. F. Keating: Teaching tenure, p. 165-68. 20. J. H. Beveridge: Vacation-club work, p. 170-73. 21. M. B. King: Short-unit industrial courses, p. 173-77. 22. C. W. Cookson: The ethical as the essential factor in training for efficient citizenship in a democracy, p. 179-83. 23. George Melcher: The two phases of educational research and efficiency in the public schools, p. 183-88. 24. S. A. Courtis: Standardization of teachers' examinations, p. 188-96. 25. F. W. Ballou: Improving instruction thru educational measurement, p. 196-203. 26. E. B. Shallow: Does a strict enforcement of the compulsory education law assist teachers and supervisors in their work? p. 204-7; Discussion, p. 207-209.

Paper no. 2 also appears in *American school*, 2 : 74-80, 104-7, 140-42, March, April, May, 1916; no. 3 in *School and society*, 3 : 613-17, April 29, 1916; no. 6 in *Educational administration and supervision*, 2 : 219-34, April 1916; no. 12 in *School news and practical educator*, 29 : 416-20, May 1916; no. 18 in *American schoolmaster*, 9 : 160-70, April 1916; no. 23 in *American school board journal*, 52 : 23-24, 87, May 1916; no. 25 in *Educational administration and supervision*, 2 : 354-67, June 1916.

960. National society for the study of education. Fifteenth yearbook. Part II. The relationship between persistence in school and home conditions. Chicago, Ill., University of Chicago press, 1916. 119 p. 8°. (Guy M. Whipple, secretary-treasurer, University of Illinois, Urbana, Ill.)  
Bibliography on Retardation and elimination, p. 112-19.

961. Ayres, Leonard P. School organization and administration. Cleveland, O., - The Survey committee of the Cleveland foundation, 1916. 135 p. 12°. One of the 25 sections of the report of the education survey of Cleveland conducted by the Survey committee of the Cleveland foundation in 1915.

962. Baker, George M. Constructive supervision. Kentucky high school quarterly, 2 : 18-39, July 1916.  
Selected references: p. 39.  
A compilation of lecture and reading notes collected during the past three years.

963. Cubberley, Ellwood P. Supplemental report on the organization and administration of School district number one in the city and county of Denver. Denver, Colo., The School survey committee, 1916. 21 p. diags. 8°.

964. Deffenbaugh, W. S. Supervision in smaller cities. Pennsylvania school journal, 65 : 15-19, July 1916.  
The duties of supervisors of schools in small cities.

965. Dick, William. "How can school expenditures be minimized without impeding progress?" *American school board journal*, 53 : 15-16, 92-93, July 1916.  
This paper was read before the National association of school board accounting officers, May 17, 1916.  
Eliminating waste in school administration.

966. **Duke, E. A.** A guide to better schools. [Oklahoma City] Issued by R. H. Wilson, state superintendent of public instruction, 1916. 158 p. illus. 8°. CONTENTS.—I. Physical features.—II. Health and sanitation.—III. Model schools.—IV. The teacher's home.—V. Consolidation.—VI. Union graded schools.—VII. Rural schools.—VIII. Social centers.—IX. Seed tests.—X. Flowers.—XI. Moonlight schools.—XII. Thrift teaching.—XIII. The school library.—XIV. Summary and conclusion.
967. **Knight, Frederick B.** The content and arrangement of the superintendent's report to the school board of a large town or small city. American school board journal, 53 : 27, 88-89, July 1916. illus.
968. **McAndrew, William.** The public and its school; a statement of the means of finding what the intelligent public expects of children and how a school system may be managed to deliver the goods. Relieved by pictures made by school girls and boys. Yonkers-on-Hudson, N. Y., World book company, 1916. xii p., 1 l., 76 p., illus. 12°. (School efficiency monographs)  
 "This book is Mr. McAndrew's annual report as division superintendent in charge of the elementary schools in Brooklyn."—Publisher's statement.
969. **New York academy of public education.** Report on home work in elementary schools made by Committee on administration. New York, New York academy of public education, 1916. 28 p. 8°. Edward A. Stitt, chairman.
970. **Snedden, David.** Scientific methods in educational administration. Educational administration and supervision, 2 : 279-83, May 1916.  
 From the seventy-ninth annual report of Board of education, Massachusetts.
971. **Views on boards of education.** Journal of education, 83 : 683-89, 694, 700, 702, 704, 706, 708, 723-25, June 22, 29, 1916.  
 A symposium, containing the views of many school superintendents on the duties of boards of education.
972. **Wagner, Charles A.** Discussion of the State board of education's proposals for school legislation. 1916. 16 p. 8°. Writer is secretary of the State board of education and commissioner of education of Delaware.
973. ———. Transition to the county unit plan of school control. American school board journal, 53 : 20-21, 82, July 1916.  
 Some of the problems that will arise where county control is to supersede district or township control.

## SCHOOL MANAGEMENT.

974. **Bate, W. G.** How some pupils study. American school board journal, 53 : 22, 77-80, August 1916.  
 Time spent in study, study habits of pupils, and help from teachers.
975. **Busch, Ella Adeline.** The use of study-halls. Educational administration and supervision, 2 : 235-42, April 1916.  
 Suggests a way for creating more favorable conditions for study for those pupils who habitually waste a part of the time they spend in study-halls.
976. **Corporal punishment in the high school—a symposium.** High school quarterly, 4 : 234-40, July 1916.  
 An inquiry was recently sent out to the leading high schools in ten Southern states to determine the extent to which corporal punishment is used. 47% of the schools had no cases of corporal punishment during the year 1915-16; 32% had from 1 to 5 cases; 16% had from 6 to 20 cases; 5% had from 20 to 75 cases.
977. **Dearborn, George Van N.** Economy in study. Examination preparedness. Scientific American supplement, 81 : 410-11, June 24, 1916.  
 Fifth and final article of series. How to prepare for and how to perform mental examinations of all kinds. Discusses the psychology of examinations.

978. **Driggs, Howard B.** Essentials. Nebraska teacher, 18 : 409-10, 412, 414, May 1916.

A plea to eliminate the non-essentials and vitalize everything taught by connecting it closely with life. A plea to "cut out and connect up." The school cannot teach every good thing nor take the whole responsibility for the child. The home, the church, the community should be made to do their part.

979. **Hall-Quest, Alfred Lawrence.** Supervised study; a discussion of the study lesson in high school. New York, The Macmillan company, 1916. xvii, 433 p. illus. 12°.

Bibliography: p. 409-416.

980. **Holmes, Edmond G. A.** Discipline and freedom. Nineteenth century, 80: 88-100, July 1916.

Writer says that neither "the discipline of compulsion nor the discipline of repression can moralise or socialise mankind." A plea for self-discipline—the discipline of freedom and self-control. Discusses the Montessori system.

981. **Pittenger, Benjamin F.** The school and the individual. American school-master, 9 : 193-205, May 1916.

The author maintains that the school should give especial attention to the quantitative aspects of inherent variations and to the qualitative aspects of acquired differences by providing a very flexible system of promotion throughout each school course.

982. **Stevens, H. C.** A survey of retarded school children. School review, 24 : 450-61, June 1916.

Survey made in a small town of northern Minnesota. A large proportion of the retarded children were foreign-born.

983. **True, A. C.** The change of stress in making the curriculum from subject-matter to the individual. High school quarterly, 4 : 261-67, July 1916.

984. **Witham, Ernest C.** Teachers' marks in eighth A, B, and C divisions. Educational administration and supervision, 2 : 243-50, April 1916.

Reprinted.

In conclusion the writer says that the common tendency in many school systems is to rate pupils altogether too high.

### SCHOOL ARCHITECTURE.

985. **Hoagland, Ira N.** Safety from fire in schools. Child-welfare magazine, 10: 317-22, May 1916.

986. **Willis, B. F.** The ideal rural school building. American school board journal, 52 : 22-24, June 1916.

"The present paper is an abstract of an address delivered to the Four-state rural life conference at the Philadelphia Chamber of commerce, February 9, 1916. The author has been the leading spirit in the movement for better school buildings in the Keystone state . . ."

### SCHOOL HYGIENE AND SANITATION.

987. **Berkowitz, J. H.** School nurses, teachers, and parents. Need of their cooperation in following up cases for treatment. 3 p. 4°.

Reprinted from the Modern hospital, vol. 6, no. 6, June 1916.

988. **Kerr, James.** Newsholme's school hygiene. The laws of health in relation to school life. New ed., rewritten for all school workers. London, George Allen & Unwin ltd. [1916] 352 p. illus. 12°.

989. **Kingsley, Sherman C.** The work of the open-air schools conducted by the Elizabeth McCormick memorial fund. Better schools, 2 : 82-86, April 1916.

990. **Schmitt, Clara.** An experiment in the feeding of undernourished school children. Educational bi-monthly, 10 : 379-90, June 1916.

The results of an experiment in feeding school children at the University avenue school, Chicago.

991. **Todd, John B.** Constructive school hygiene. *School and society*, 3 : 617-24, April 29, 1916.

Gives a number of advantages of the one-story multiple-unit school, and says that the cottage schools are better in every way and cheaper.

### PHYSICAL TRAINING.

992. **National collegiate athletic association.** Papers presented at the tenth annual convention, New York city, December 1915. *American physical education review*, 21 : 201-29, April 1916.

Contains: 1. L. R. Briggs: The president's address [Intercollegiate athletics] p. 201-203. 2. Albert Lefevre: Schedule-making and institutional responsibility, p. 204-208. 3. R. N. Corwin: College ideals and athletics, p. 209-14. 4. Howard McClenahan: Athletic standards, p. 215-19. 5. H. A. Garfield: Athletics for all, p. 220-24. 6. W. H. Taft: College athletics, p. 225-29.

993. **Arnold, E. H.** "Preparedness"—Presidential address. *American physical education review*, 21 : 351-59, June 1916.

At the twenty-third annual convention, Cincinnati, O., April 19, 1916.

Discusses the question "What has physical education done in preparing for any and all emergencies of life?"

994. **Bowen, Wilbur P.** Athletics for everybody. *American schoolmaster*, 9 : 206-13, May 1916.

995. **Fisher, George J.** How may we secure character and spiritual values through the activities of the physical department. *Physical training*, 13 : 254-63, June 1916.

### SOCIAL ASPECTS OF EDUCATION.

996. **Brown, George A.** A rejoinder and a recognition of subjective aims in education. *School and home education*, 35 : 323-27, June 1916.

A rejoinder to W. I. Hamilton's article in this journal discussing Commissioner Snedden's address on the social objectives as aims in education.

997. **Braucher, Howard S.** Why I believe that community and neighborhood centers, schools, and parks should be under government direction and support. *Playground*, 10 : 83-96, June 1916.

998. **Fitzpatrick, Edward A.** The political aspects of the community center, or the school building as a civic center. *School and society*, 4 : 159-65, July 29, 1916.

An address delivered before the National conference on community centers and related problems, New York, April, 1916.

999. **Landgraf, G. H.** Social activities in the high school. *Wisconsin journal of education*, 48 : 166, 168, 170, 172, June 1916.

Social work in the high school of Marinette, Wisconsin.

1000. **Rosedale, Blanche Cole.** The community center. *Educational foundations*, 27 : 531-35, May 1916.

An institution which is destined to exercise an influence on American life second only to that of the public schools.

1001. **Sims, Newell L.** The social aspect of the school. *Progress*, 2 : 209-11, 242-47, May, June, 1916.

An address delivered before the Florida educational association, Tallahassee, December 29, 1915.

1002. **Von Tungeln, George H.** The teacher and community well-being. *Journal of home economics*, 8 : 279-87, June 1916.

An address delivered before the Home economics division of the Iowa teachers' association at Des Moines, November 4, 1915.

Gives suggestions of community undertakings that can be successfully fostered by teachers.

## MORAL EDUCATION.

1003. **B., V.** Les devoirs libres dans l'enseignement moral. *Revue pédagogique*, 68, 387-94, May 1916.

Description of the work of a class of young girls at Pontoise.

1004. **Heater, Elsor.** Cheating in high school. *Ohio educational monthly*, 65 : 248-51, June 1916.

An investigation of the extent of cheating among the high school students of Middletown, Conn.

1005. **Kirsch, Felix N.** The education of the individual. *Catholic educational review*, 11 : 423-32, May 1916.

Calls attention to some of the difficulties of character training and suggests a few general lines of treatment.

1006. Moral conditions in Massachusetts high schools. *Journal of education*, 83 : 429-30, 438-39, April 20, 1916.

The Committee on moral welfare of the Massachusetts Sunday school association made an investigation to determine if the slanderous statements that had been made about the Massachusetts high schools were true. Quotations from every reply received are given showing that there has not been sufficient grounds for the statements that have been made against the high schools.

## RELIGIOUS EDUCATION.

1007. **Methodist Episcopal church, South.** Educational conference. Papers presented at the meetings held April 4-6, 1916, at Birmingham, Ala. *Bulletin of the Board of education of the Methodist Episcopal church, South*, 6 : 3-112, May 1916.

Contains: 1. Stonewall Anderson: The causes and cure of our educational rivalries and jealousies, p. 3-13. 2. C. H. Trowbridge: Functions and limitations of denominational secondary schools, p. 13-18. 3. W. A. Webb: In what respects should a college for women be different from a college for men? p. 18-26. 4. J. M. Williams: In what respects should a college for women differ from a college for men? p. 26-35. 5. H. E. Stout: The place of the junior college in the system of schools conducted by the church, p. 36-39. 6. J. O. Leath: The relation of the junior college to the standard college, p. 39-45. 7. R. E. Blackwell: The importance of the place of the college in the system of schools conducted by the church, p. 46-49. 8. J. W. Shackford: The joint standardization of courses of religious education for colleges, p. 49-57. 9. G. S. Wyatt: By what method may the church supply means of religious education to her youth attending high schools? p. 57-65. 10. S. E. Mercer: Is college endowment overemphasized? p. 78-86.

1008. **Curley, Michael J.** The aim of Catholic education. *Catholic educational review*, 12 : 18-26, June 1916.

An address delivered at the dedication of the Cathedral high school, St. Augustine, Florida, April 30, 1916.

1009. Religious education, vol. 11, no. 3, June 1916. (Week-day religious instruction)

Contains: 1. W. M. Wirt: The Gary public schools and the churches, p. 221-26. 2. J. L. Magnes: Attitude of the Jews toward week-day religious instruction, p. 226-30. 3. P. R. McDevitt: The problem of curriculum for week-day religious instruction from the Roman Catholic viewpoint, p. 231-38. 4. H. H. Meyer: The curriculum of week-day religious instruction considered from the Protestant viewpoint, p. 239-44. 5. W. S. Athearn: Teachers for week-day religious schools, p. 245-52. 6. M. C. Settle: Community schools. Upon what conditions can churches of different denominations combine for week-day instruction, p. 252-59. 7. E. S. Lewis: Do present plans endanger our religious liberties? p. 259-70.

1010. **Richardson, Norman E.** Parochial schools and religious day schools in Protestant churches. *Religious education*, 11 : 336-44, August 1916.

1011. Teaching the Bible in colleges. *Religious education*, 11 : 314-23, August 1916.

The report of a subcommittee of the department of universities and colleges, on Bible teaching in universities and colleges, based upon results of investigation made in 1915-16.



## MANUAL AND VOCATIONAL TRAINING.

1012. **Eastern arts association.** Proceedings sixth annual meeting, Buffalo, N. Y., April 29 to May 1, 1915. 219 p. 8°. (Fred P. Reagle, secretary, Montclair, N. J.)  
Contains: 1. W. S. Coffin: Art in the trades, p. 7-19. 2. David Varon: Architecture a factor in education, p. 30-34. 3. A. F. Wiener: Commercial art applied to advertising and suggestions for lessons therein, p. 45-52. 4. A. S. Hurrell: The organization and operation of a technical high school, p. 53-59. 5. E. W. Boshart: Present trend in prevocational education, p. 62-65; Discussion [by] A. E. Dodd, p. 66-68. 6. W. B. Kamprath: The organization and operation of vocational courses in printing, p. 69-80. 7. A. W. Garritt: A manual training course with an industrial purpose, p. 81-85. 8. Cleo Murtland: Some vocational aspects of home economics, p. 106-8. 9. Martha F. King: The manner in which purpose and material limit and condition applied design, p. 113-19; Discussion, p. 120-26. 10. Mary A. Parsons: The minimum essentials in drawing for future grade teachers, p. 127-34. 11. Report of committee on desirable professional status of the manual training teacher, p. 147-56.
1013. **Andrews, Benjamin R.** Progress in practical arts education. Teachers college record, 17 : 233-39, May 1916.  
An address before the Teachers college alumni association, February 18, 1916.
1014. **Carman, Kenneth V.** Basing work in industrial arts on the construction of a new building. Teachers college record, 17 : 247-62, May 1916.  
A successful experiment carried on in Westfield, N. J.
1015. **Dooley, William H.** The education of the ne'er-do-well. Boston, New York [etc.] Houghton Mifflin company [1916] xi, 164 p. 12°. (Riverside educational monographs, ed. by H. Suzzallo)  
Deals with the problem of the large number of boys and girls of limited ability who have to leave school early.
1016. ——— The purpose of a vocational high school. Optimist, 2 : 101-107, April 1916.  
Says the distinct purpose of the technical high school is to develop economic efficiency. Nevertheless the pupil should be prepared not merely to become a cog in a wheel, but also to be a human being. This means that every pupil should receive in addition to skill the required education in English, history, and civics. Gives courses of study.
1017. **Field, W. Stanwood.** Vocational training through trade and continuation schools and its relation to the democracy of education. School and society, 3 : 871-78, June 17, 1916.
1018. **Franzoni, Andrea.** La scuola del lavoro. Milano, Direzione e amministrazione [1916] 80 p. 8°. (Quaderni di pedagogia. anno I, ser. I, n. 1. 15 gennaio, 1916)  
"Notizie bibliografiche": p. [76]-80.
1019. **Martin, John.** Vocational and occupational education in New York city. Nation, 102 : 696-97, June 29, 1916.  
Reviews the work of Wm. Wirt, of Gary, Indiana, and the introduction of the Gary system in New York city.
1020. **Odenchantz, Louise O. and Potter, Zenas L.** Industrial conditions in Springfield, Illinois. A survey by the committee on women's work and the department of surveys and exhibits, Russell Sage foundation . . . The Springfield survey. Industrial section. New York city, Department of surveys and exhibits, Russell Sage foundation, 1916. 173 p. illus. 8°.
1021. **Rocheron, E.** Du rôle de l'école dans la rénovation de l'apprentissage. Revue pédagogique, 68 : 473-90, June 1916.  
A plan for vocational education made necessary by the loss of industrial workers in the war.
1022. **Scott, Leon Wislar.** Practical education—tomorrow's demand. Manual training and vocational education, 17 : 665-73, May 1916.
1023. **Snedden, David.** Problems of art education. School and society, 3 : 685-97, May 13, 1916.  
Paper read before the Eastern arts association, Springfield meeting, April 20, 1916.



1024. **Thomas, F. W.** Educational work of the Atchison, Topeka & Santa Fe railway co. How this great progressive railway system trains its apprentice employes. National association of corporation schools, Bulletin, 3 : 20-29, May 1916.
1025. **Van Gaasbeek, Richard M.** Some educational values in productive work. Industrial-arts magazines, 5 : 245-49, June 1916.  
The educational values of productive work in the woodworking industry.
1026. **Wade, John E.** Experimenting with prevocational training in New York city. Educational administration and supervision, 2 : 343-53, June 1916.  
Discusses the Gary and the Ettinger plans for vocational training in New York city, giving the main features of each.
1027. **Women's educational and industrial union, Boston.** The School of salesmanship. Department store education for saleswomen, for teachers. March 1916. 19 p. 12°.

#### VOCATIONAL GUIDANCE.

1028. **Hollingworth, H. L.** Vocational psychology; its problems and methods. With a chapter on The vocational aptitudes of women, by Leta Stetter Hollingworth. New York, D. Appleton and company, 1916. xviii, 308 p. 8°.
1029. **National association of corporation schools.** Advance copy of the report of Committee on vocational guidance (The organic development of business) . . . Fourth annual convention, Pittsburgh, Pa., May 30 to June 2, 1916. 148 p. 8°.
1030. **Righter, Leonard.** Vocational guidance a part of regular school work. Industrial-arts magazine, 5 : 346-48, August 1916.  
A plan of vocational guidance based on a course in general industrial intelligence in the elementary grades and, as the children advance, the working out of projects with their attendant problems, accompanied by suggestions relative to the occupation most stressed. By such a plan the author says it is hoped the boys and girls will come through their own development to realize their abilities to fill a definite place in the world of workers.

#### AGRICULTURAL EDUCATION: SCHOOL GARDENS.

1031. **American association of farmers' institute workers.** Proceedings of the twentieth annual meeting . . . held at Berkeley, Cal., August 12-14, 1915. East Lansing, Mich., 1915. 155 p. 8°. (L. R. Taft, secretary, East Lansing, Mich.)  
Contains: 1. G. I. Christie: Movable schools of agriculture and their work, p. 42-44; Discussion, p. 44-47. 2. F. S. Cooley: The cooperation of farmers' institutes with other educational agencies, p. 47-56; Discussion, p. 56-59. 3. Bradford Knapp: How can we help the boys? p. 73-76. 4. W. D. Hurd: Shall extension services include the social, recreational and educational improvement of rural and urban districts? p. 124-34. 5. Mrs. H. W. Calvin: Organization and methods in home economics, p. 134-40.
1032. **Association of American agricultural colleges and experiment stations.** Proceedings of the twenty-ninth annual convention of the Association of American agricultural colleges and experiment stations and of the fourth annual convention of the Land-grant college engineering association, held at Berkeley, Cal., August 11-13, 1915. Montpelier, Vt., The Capital City press, 1915. 304 p. 8°. (J. L. Hills, secretary, Burlington, Vt.)  
Contains: *Association of American agricultural colleges and experiment stations.* 1. Bills relating to agricultural extension introduced in Congress Dec. 15, 1909, to Dec. 12, 1913, p. 35-44. 2. A. C. True: Report of the Committee on instruction in agriculture, p. 45-70. 3. E. A. Bryan: A national system of education, p. 72-82. 4. A. R. Hill: The preparation of teachers as contemplated in the Nelson amendment, p. 96-100. 5. Samuel Avery: Report of the committee on college organization and policy, p. 104-23. 6. A. Vivian: The correlation of the college of agriculture with the other colleges of the state, p. 130-34. 7. S. P. Capen: The relation of the Bureau of education to the agricultural colleges, p. 140-46. 8. R. A. Pearson: The preparation required for the college teacher in agriculture, p. 156-59. 9. T. F. Hunt: The preparation required for

research work in agriculture, p. 159-61. 10. A. C. True: The preparation required for extension work in agriculture, p. 161-65; Discussion, p. 165-68. 11. C. A. Kaffer: County organization of extension work in agriculture and home economics, p. 214-20. 12. W. D. Hurd: Shall extension service include the social, recreational and educational improvement of rural and urban districts? p. 232-41. 13. Mrs. H. W. Calvin: Organization and methods in home economics extension, p. 241-46. *Land-grant college engineering association*. 14. C. H. Benjamin: Report of special committee on fees for professional (engineering) services in land-grant colleges, p. 259-71. 15. A. W. Richter: Adaptation of engineering education to local needs, p. 274-77. 16. G. A. Covell: Correlation of courses of study in engineering, p. 277-81. 17. O. V. P. Stout: Lessons to be drawn from the experience of the agricultural experiment stations, p. 288-94.

1033. **Butterfield, Kenyon L.** A state system of agricultural education . . . : January, 1916. Boston, Wright and Potter printing company, 1916. 19 p. 8°. Reprinted from the fifty-third annual report of the Massachusetts agricultural college. Public document 31, Part 1.

1034. **Guss, Roland W.** A graded course of garden work and nature-study. Nature-study review, 12 : 213-25, May 1916.  
Outline of the course, grades 1 to 9.

1035. **Randall, John L.** Practical agricultural training for city children. Pennsylvania school journal, 64 : 461-63, April 1916.  
Address before the Department of county superintendents of the Pennsylvania educational association.

1036. **Taylor, H. C.** The essentials of agricultural education. Wisconsin journal of education, 48 : 126-30, May 1916.

1037. **Teall, Robert J.** The effective use of the school farm: a record of an unfinished experiment. Manual training and vocational education, 17 : 762-70, June 1916.  
The use of a school farm as a means in high-school agricultural education.

### HOME ECONOMICS.

1038. **Bevier, Isabel.** Home economics: its opportunities and obligations. School and society, 3 : 737-41, May 20, 1916.

1039. **Boughton, Alice C.** Household arts and school lunches. Cleveland, O., The Survey committee of the Cleveland foundation, 1916. 170 p. plates. 12°. One of the 25 sections of the report of the education survey of Cleveland conducted by the Survey committee of the Cleveland foundation in 1915.

1040. **Kauffman, Terva E.** The teaching of home economics in the rural schools in connection with the school lunch. Ohio educational monthly, 65 : 313-20, July 1916.  
Tells of the work undertaken by the Department of home economics of Ohio state university.

1041. **Loomis, Alice.** Home economics correspondence courses of collegiate grade. Journal of home economics, 8 : 227-31, May 1916.  
Presented at the Conference of teachers of home economics in Land grant colleges and universities, held in connection with the Association of American agricultural colleges, Berkeley, Cal., 1915.

### COMMERCIAL EDUCATION.

1042. **Eastern commercial teachers' association.** Proceedings of the nineteenth annual convention, New York City, April 20-22, 1916. Business journal, 40 : 438-64, June 1916.

Contains: 1. C. A. Herrick: Articulation of secondary education and higher education, p. 440-44. 2. F. F. Baltz: The aim and extent of a bookkeeping course in secondary schools and classroom methods, p. 444-47. 3. F. C. Schwedtman: Commercial education and the National city bank, p. 447-52. 4. F. H. Sommer: Commercial law, its place and content in the secondary school, p. 452-53. 5. Percy Strauss: Preparing for business, p. 454-56. 6. W. E. Dengler: The aim, content and method of teaching business English, p. 456-60. 7. J. S. Knox: Salesmanship, p. 460-63.

## PROFESSIONAL EDUCATION.

1043. **American medical association. Council on medical education.** Report of the twelfth annual conference, held at Chicago, Ill., February 7, 1916. American medical association bulletin, 11 : 83-160, January 15, 1916. (N. P. Colwell, secretary, 535 Dearborn street, Chicago, Ill.)

Contains: 1. N. P. Colwell: Progress in medical education, p. 93-107. 2. James Ewing: Principles and experiments in medical education, p. 120-28. 3. F. S. Lee: A proposed undergraduate course in clinical physiology, p. 129-32; Discussion, p. 132-35. 4. V. C. Vaughn: Educational standards, p. 148-50.

1044. **Association of American law schools.** Handbook . . . and proceedings of the fifteenth annual meeting held at Chicago, Ill., December 28-30, 1915. 122 p. 8°. (Eugene A. Gilmore, secretary-treasurer, Madison, Wis.)

Contains: 1. H. S. Richards: Progress in legal education, p. 60-70. 2. Papers and discussion concerning the Redlich report, p. 77-118.

1045. **National league of nursing education.** Proceedings of the twenty-first annual convention . . . held at San Francisco, Cal., June 21-25, 1915. Baltimore, Williams & Wilkins company, 1915. 235 p. 8°. (Isabel M. Stewart, secretary, Columbia university, New York City)

Contains: 1. Louise M. Powell: Existing affiliations between universities and training schools, p. 107-14. 2. How to help pupil nurses to study, p. 115-22. 3. Anne M. Nicholson: What constitutes good teaching, p. 123-33. 4. H. D. Favill: What the medical profession can contribute to nursing education, p. 153-60. 5. W. H. Smith: The educational function of the hospital, p. 160-69. 6. Lila Pickhardt: Record keeping in schools for nurses, p. 169-73; Discussion, p. 173-76. 7. Carolyn Gray: Self-government—its advantages and limitations as applied to schools of nursing, p. 192-98; Discussion, p. 198-205.

1046. **Barker, Lewellys F.** The teaching of clinical medicine. Science, 43 : 789-10, June 9, 1916.

Read at the meeting of the Association of American medical colleges, Chicago, February 1916. Writer deals with the development of the teaching of the science and art of diagnosis.

1047. **Councilman, W. T.** Further reflections of a medical teacher. Journal of the American medical association, 66 : 2045-51, June 24, 1916.

Comparison of German and American methods of teaching, etc.

1048. **Harris, D. Fraser.** The influence of Greece on science and medicine. Scientific monthly, 3 : 51-65, June 1916.

An interesting historical sketch.

1049. **Smith, Alexander.** The training of chemists. Science, n. s. 43 : 619-29, May 5, 1916.

A plea for more research work and adequate training. Discusses standard courses, equipment, etc.

An address delivered in Urbana, at the opening of the chemical laboratory of the University of Illinois.

1050. **Thayer, William S.** Teaching and practice. Science, n. s. 43 : 691-705, May 19, 1916.

Discusses the problems which confront the director of a department of medicine today.

Address of the president of the Congress of American physicians and surgeons delivered at Washington, May 9, 1916.

## CIVIC EDUCATION.

1051. **Citizenship syllabus.** Prepared by Research department of the Committee for immigrants in America. Albany, N. Y., New York state department of education, 1916. 48 p. 8°.

Reprinted in Atlantic educational journal, 11 : 459-64, 518-24, May, June 1916.

"Although the material here presented was designed for classes of immigrants, it will prove equally serviceable for any class of students beginning the study of civics."

1052. **Ellis, Dayton.** Community life and social problems. *Pennsylvania school journal*, 64 : 561-67, June 1916.

Gives a plan of teaching civics based on community life. First the class briefly reviews the civics taught in the grades and then a rather detailed study is made of the industrial (vocational), educational, religious, social (home), and political phases of community life.

1053. **Foster, G. A.** Making good citizens. *School education*, 35 : 8-9, June 1916.

A course in civics, not in the technical sense of the word, but through thought, speech, and action materially assisting in preparing boys and girls to live lives of usefulness, and to get a clearer viewpoint for the technical study of the subjects of civics in the high school course.

### MILITARY TRAINING.

1054. **Creel, George.** Military training for our youth. *Century magazine*, 92 : 20-26, May 1916.

Writer contends that compulsory military training will contribute to the wholesomeness and virility of the race. It will heighten patriotism, and improve the physique of youth.

1055. **Meiklejohn, Alexander.** A schoolmaster's view of compulsory military training. *School and society*, 4 : 9-14, July 1, 1916.

Address before the Academy of political science, May 18, 1916.

Discusses the proposal of universal compulsory military training as a matter of educational policy.

### SCHOOLS FOR MAIMED SOLDIERS.

1056. **Bouglé, C.** Entre les deux rives, une conférence sur les écoles de mutilés. *Revue pédagogique*, 68 : 269-77, April 1916.

Shows the possibility of the schools for the wounded in developing the industrial resources of France after the war.

1057. **Hannan, Thomas.** Technical schools for maimed soldiers: L'école Joffre. *Contemporary review*, 110 : 105-12, July 1916.

A movement in France for the "re-education" of soldiers who have been so injured in the war that they will not be able to follow their former employment. First school was established in Lyons. Other cities and towns have followed rapidly in the steps of Lyons.

### EDUCATION OF WOMEN.

1058. **Southern association of college women.** Proceedings of the thirteenth annual meeting, April 13-15, 1916, Montgomery, Ala. 108 p. 8°. (Mary L. Harkness, secretary, New Orleans, La.)

Contains: 1. Elizabeth A. Colton: The changing emphasis in the education of women in the South, p. 11-15. 2. W. W. Guth: First things first, p. 15-21.

1059. **Cannon, Mary Agnes.** The education of women during the Renaissance. Washington, D. C., 1916. 182 p. 8°.

A dissertation submitted to the Catholic sisters college of the Catholic University of America in partial fulfillment of the requirements for the degree doctor of philosophy.

CONTENTS.—Preface.—I. Italy.—II. Spain and Portugal.—III. England.—IV. France.—V. Northern Europe.—Bibliography.

1060. **Conference on the prospective work of Carson college for girls and Charles E. Ellis college.** Care and training of orphan and fatherless girls. Proceedings of a Conference . . . held at Philadelphia, October 13-14, 1915, on the invitation of the trustees of Carson college and Ellis college. Published by the Wm. F. Fell company [1916] 236 p. plates. 8°.

1061. **Ferris, Helen J., ed.** The new world and the college woman. Contributions by women college graduates who have adventured in the modern work-a-day world and found their places there. Bookman, February-May 1916.

CONTENTS.—I. A pageant of college women, by Ella McCaleb.—II. The business of play, by Mathilde Vossler.—III. Opportunities for college women in library work, by Mary Emogene Hazeltine (42 : 678-91, February 1916)—IV. An editorial experience, by Gabrielle Elliot.—V. Conserving the immigrant girl, by Edith L. Jardine.—VI. A bacteriologist at work, by Ruth O. Pierson (43 : 63-74, March 1916)—VII. The school garden, by M. Louise Greene.—VIII. College women in business, by Mary A. White.—IX. Training for efficiency in the department store, by Mrs. Lucinda W. Prince (43 : 183-93, April 1916)—X. Adventures in practical aesthetics, by Antoinette R. Perrett.—XI. The college graduate in welfare work, by Helen J. Ferris.—XII. Secretarial work and the college woman, by Ann E. Thomas (43 : 286-97, May 1916).

1062. **Perry, Lorinda.** Millinery as a trade for women . . . Prepared under the direction of Susan Myra Kingsbury and Marion Parris Smith . . . New York, London [etc.] Longmans, Green, and company, 1916. 134 p. 8°. (Women's educational and industrial union, Boston. Department of research. Studies in economic relations of women, vol. 5)  
Submitted in partial fulfilment for the degree of doctor of philosophy in the department of economics, Bryn Mawr college.
1063. **Richards, Florence L.** The dean of women. *American schoolmaster*, 9: 241-51, June 1916.  
Adapted from a paper read at the meeting of the North Central association of normal school presidents, at Chicago, February 18, 1916.  
Discusses the various duties of the dean of women.
1064. **Richmond, Winifred.** Present practices and tendencies in the secondary education of girls. *Pedagogical seminary*, 23 : 184-98, June 1916.  
Discusses the following questions: segregation, home economics, housecraft or hom/craft schools, vocational courses and trade schools, and continuation schools.
1065. **Vassar, Matthew.** The autobiography and letters of Matthew Vassar, ed. by Elizabeth Hazelton Haight. New York, Oxford university press, American branch, 1916. 210 p. illus. 8°.
1066. **Vassar college.** The fiftieth anniversary of the opening of Vassar college, October 10 to 13, 1915; a record. Poughkeepsie, N. Y., Vassar college, 1916. 337 p. plates. 8°.

#### NEGRO EDUCATION.

1067. **Sibley, James L.** County training schools in Alabama. *Southern workman*, 45 : 407-12, July 1916.  
Work of the new type of school for negro youth in the South, fostered by the States board in cooperation with the public school authorities in the counties.
1068. **Willcox, William G.** Tuskegee's contribution to natural efficiency. *Southern workman*, 45 : 446-48, August 1916.

#### EDUCATION OF IMMIGRANTS.

1069. **Lenz, Frank B.** The education of the immigrant. *Educational review*, 51 : 469-77, May 1916.  
Discusses the education of immigrant adults and evening schools for foreigners. Advocates supplementary activities; and mentions the main assimilative activities of the immigrant child.
1070. **Miller, Herbert A.** The school and the immigrant. Cleveland, O., The Survey committee of the Cleveland foundation, 1916. 102 p. 12°.  
One of the 25 sections of the report of the education survey of Cleveland conducted by the Survey committee of the Cleveland foundation in 1915.

#### EDUCATION OF DEAF.

1071. **Nitchie, Edward B.** Principles and methods of teaching lip-reading. *Volta review*, 18 : 269-80, July 1916.  
Explains his method of lip-reading. Lays emphasis on the mental-factor. Discusses the subject under the following heads: 1. Synthetic power of the mind; 2. The intuitive power of the mind; 3. Quickness of mind; 4. Alertness of mind; 5. The power of concentration.
1072. **Statistics of speech-teaching in American schools for the deaf.** *Volta review*, 18 : 200-13, May 1916.  
Gives list of schools for the deaf in the United States on March 1, 1916, with extensive statistics.

#### EXCEPTIONAL CHILDREN.

1073. **Cornman, Oliver P.** Special classes in the public schools. The backward and the mentally deficient pupil. *Current education*, 20 : 143-46, May 1916.  
Abstract of an address given at the exhibit on feeble-mindedness, held under the auspices of the Public charities association of Pennsylvania.

1074. **Edson, Andrew W.** The problem of the feeble-minded child in the public schools. Ungraded, 1 : 189-93, April 1916.

Gives some suggestions for the treatment of feeble-minded children in the public schools.

1075. **Goddard, H. H.** Defectives in the schools. Teaching, 2 : 5-18, April 1, 1916.

1076. **McMurtrie, Douglas C.** Industrial training in Edinburgh for crippled boys and girls. American journal of care for cripples, 3 : 10-16, 1916.

Reprinted by permission from the Journal of the Missouri state medical association, St. Louis, 1916, xii, p. 78-81.

### EDUCATION EXTENSION.

1077. **Wisconsin state board of industrial education.** Papers and discussions, Conferences of teachers, Wisconsin public industrial, commercial, continuation and evening schools . . . Madison, Published by the Board, 1916. 113 p. 8°. (*Its Bulletin* no. 13)

### LIBRARIES AND READING.

1078. **Ayres, Leonard P. and McKinnie, Adele.** The public library and the public schools. Cleveland, O., The Survey committee of the Cleveland foundation, 1916. 93 p. illus. 12°.

One of the 25 sections of the report of the education survey of Cleveland conducted by the Survey committee of the Cleveland foundation in 1915.

1079. **Bostwick, Arthur E.** How the community educates itself. Library journal, 41 : 541-47, August 1916.

Read before the American library association, Asbury Park, N. J., June 27, 1916.

1080. **Cabot, Ella Lyman.** Children's reading as a help in training character. Religious education, 11 : 207-20, June 1911.

1081. **Hudson, Jay William.** The library and the modern university. Public libraries, 21 : 293-97, July 1916.

Address at the formal opening of the new library building at the University of Missouri, Columbia, January 6, 1916.

1082. **Logasa, Hannah.** Some phases of library-study-room management. School review, 24 : 352-58, May 1916.

Gives a list of study helps for students of the University high school, Chicago, Ill.

1083. **Walter, Frank K.** The coming high-school library. New York libraries, 5 : 78-81, May 1916.

Paper read at meeting of the library section of the New York state teachers' association, November 23, 1915. Also published in Journal of the New York state teachers' association, 3 : 137-41, May 1916.

### BUREAU OF EDUCATION: RECENT PUBLICATIONS.

1084. Advancement of the teacher with the class; by James Mahoney. Washington, 1916. 81 p. (*Bulletin*, 1915, no. 42)

1085. Education exhibits at the Panama-Pacific International exposition, San Francisco, Cal., 1915; by W. Carson Ryan, jr. Washington, 1916. 113 p. illus. (*Bulletin*, 1916, no. 1)

1086. Federal laws, regulations, and rulings affecting the land-grant colleges of agriculture and mechanic arts. Washington, 1916. 19 p.

1087. The institutional budget; by Hollis Godfrey. Washington, 1916. 16 p. (*Higher education circular*, April 1916)



1088. Monthly record of current educational publications. Index, February, 1915-January, 1916. Washington, 1916. 28 p. (Bulletin, 1916, no. 15)
1089. Needed changes in secondary education. Two papers presented at the Pan American scientific congress, Washington, D. C., December 27, 1915, to January 8, 1916; by Charles William Eliot and Ernesto Nelson. Washington, 1916. 32 p. (Bulletin, 1916, no. 10)
1090. Problems involved in standardizing state normal schools; by Charles Hubbard Judd and Samuel Chester Parker. Washington, 1916. 141 p. illus. (Bulletin, 1916, no. 12)

#### PERIODICALS REPRESENTED IN THIS NUMBER.

- America, 59 East Eighty-third street, New York, N. Y.
- American journal of care for cripples, 3505 Broadway, New York, N. Y.
- American journal of sociology, University of Chicago press, Chicago, Ill.
- American physical education review, 93 Westford avenue, Springfield, Mass.
- American school, P. O. Box 134, Milwaukee, Wis.
- American school board journal, 129 Michigan street, Milwaukee, Wis.
- American schoolmaster, State normal college, Ypsilanti, Mich.
- Atlantic educational journal, 19 West Saratoga street, Baltimore, Md.
- Atlantic monthly, 4 Park street, Boston, Mass.
- Better schools, Painesville, Ohio.
- Bookman, Fourth avenue and Thirtieth street, New York, N. Y.
- British journal of psychology, London, England.
- Bulletin of the Board of education of the Methodist Episcopal Church, South, Nashville, Tenn.
- Business journal, 20 Vesey street, New York, N. Y.
- Calcutta review, Calcutta, India.
- Catholic educational association bulletin, 1651 East Main street, Columbus, Ohio.
- Catholic educational review, Washington, D. C.
- Catholic historical review, Washington, D. C.
- Century magazine, 353 Fourth avenue, New York, N. Y.
- Child-welfare magazine, 227 South Sixth street, Philadelphia, Pa.
- Classical journal, University of Chicago press, Chicago, Ill.
- Contemporary review, 249 West Thirteenth street, New York, N. Y.
- Cosmopolitan student, Cambridge, Mass.
- Current education, Philadelphia, Pa.
- Education, 120 Boylston street, Boston, Mass.
- Educational administration and supervision, Warwick and York, Baltimore, Md.
- Educational bi-monthly, Board of Education, Chicago, Ill.
- Educational conference, Whitewater, Wis.
- Educational foundations, 31-33 East Twenty-seventh street, New York, N. Y.
- Educational review, Columbia university, New York, N. Y.
- Elementary school journal, University of Chicago press, Chicago, Ill.
- Engineering education, Lancaster, Pa.
- English journal, University of Chicago press, Chicago, Ill.
- Hibbert journal, 6 Beacon street, Boston, Mass.
- High school quarterly, Athens, Ga.
- Independent, 119 West Fortieth street, New York, N. Y.
- Industrial-arts magazine, 129 Michigan street, Milwaukee, Wis.
- Journal of education, 6 Beacon street, Boston, Mass.
- Journal of educational psychology, Warwick and York, Baltimore, Md.
- Journal of experimental pedagogy, London, England.
- Journal of geography, Madison, Wis.



- Journal of home economics, Station N, Baltimore, Md.
- Journal of the American medical association, 535 Dearborn street, Chicago, Ill.
- Journal of the Association of collegiate alumnae, University of Chicago press, Chicago, Ill.
- Journal of the New York state teachers' association, 5 South Water street, Rochester, N. Y.
- Kentucky high school quarterly, Lexington, Ky.
- Library journal, 241 West Thirty-seventh street, New York, N. Y.
- Manual training and vocational education, Manual arts press, Peoria, Ill.
- Mathematics teacher, 41 North Queen street, Lancaster, Pa.
- Minnesota state normal schools quarterly journal, Minneapolis, Minn.
- Modern hospital, St. Louis, Mo.
- Mother's magazine, David C. Cook publishing company, Elgin, Ill.
- Nation, P. O. Box 794, New York, N. Y.
- National association of corporation schools, Bulletin, Irving place and Fifteenth street, New York, N. Y.
- National review, London, England.
- Nature-study review, University of Chicago press, Chicago, Ill.
- Nebraska teacher, Lincoln, Nebr.
- New republic, 421 West Twenty-first street, New York, N. Y.
- New York libraries, Albany, N. Y.
- Nineteenth century, 249 West Thirteenth street, New York, N. Y.
- Ohio educational monthly, Columbus, Ohio.
- Ohio history teachers' journal, Ohio state university, Columbus, Ohio.
- Optimist, Scranton, Pa.
- Outlook, 287 Fourth avenue, New York, N. Y.
- Pedagogical seminary, Worcester, Mass.
- Pennsylvania school journal, Lancaster, Pa.
- Physical training, 124 East Twenty-eighth street, New York, N. Y.
- Pittsburgh school bulletin, Pittsburgh, Pa.
- Playground, 1 Madison avenue, New York, N. Y.
- Popular educator, 50 Bromfield street, Boston, Mass.
- Progress, Athens, Ga.
- Psychological clinic, Woodland avenue and Thirty-sixth street, Philadelphia, Pa.
- Public libraries, Library bureau, Chicago, Ill.
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- Quarterly journal of the University of North Dakota, University, N. Dak.
- Religious education, 332 South Michigan avenue, Chicago, Ill.
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Virginia state teachers' association quarterly, Richmond, Va.  
Volta review, Volta bureau, Washington, D. C.  
Western journal of education, San Francisco, Cal.  
Wisconsin journal of education, Madison, Wis.  
World's work, Garden City, N. Y.  
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Wyoming school journal, Laramie, Wyo.  
Yale review, 135 Elm street, New Haven, Conn.

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## LETTER OF TRANSMITTAL.

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DEPARTMENT OF THE INTERIOR,  
BUREAU OF EDUCATION,  
*Washington, June 8, 1916.*

SIR: Modern political, social, and industrial life demands some degree of education for all people. Modern humanitarian idealism recognizes the right of every child to such education as will enable it to live happily and successfully. That no child may be denied this right and that society and industry may be served most effectively, most progressive countries of the world have enacted laws for compulsory school attendance through the elementary grades or to the age of 12, 14, or 16. But many children are afflicted with tuberculosis in some form; some are poorly nourished and are anemic; others suffer from various other physical defects. For these, regular attendance upon indoor schools may be very injurious. The education of the schools is important, but life and health are more important. Some means must therefore be found by which these children may acquire education without danger to life or further impairment of health. It has been fully demonstrated that the open-air school rightly conducted is much better for these children than the ordinary schools, housed too often in dusty, overheated, and badly ventilated buildings. So it has come about that, although the modern open-air school is of very recent origin, it is now found in most or all of our larger cities and towns and in many of the smaller ones. Its special value both for education and for health is due to the combination of pure fresh air, proper nourishment, and a freer regimen which makes possible a wiser alternation of work and rest than is permitted by the schedule of most schools.

The movement in this country for the establishment and maintenance of open-air schools has been hastened through the initiation and financial assistance of various volunteer societies and private foundations for the prevention of tuberculosis or for the general conservation of public health. One of the foundations which has been especially helpful in this movement is the Elizabeth McCormick Memorial Fund, of Chicago, Ill., established by Mr. and Mrs. Cyrus Hall McCormick in memory of their daughter, "to improve the condition of child life in the United States." This foundation has assisted very largely in the establishment and maintenance of open-

air schools in the city of Chicago. It has also rendered valuable service by gathering and publishing information on the equipment, organization, and work of open-air schools and by advising school officers in all parts of the country in regard to these. I was, therefore, glad to accept the cooperation of this foundation in the preparation of this manuscript, which I am transmitting herewith, on the organization, equipment, and conduct of open-air schools in this and other countries. To this end Mr. Sherman C. Kingsley, director of the Elizabeth McCormick Memorial Fund, was appointed a special collaborator in this bureau; and Dr. Fletcher B. Dresslar, special agent of the bureau and professor of health education in George Peabody College for Teachers at Nashville, Tenn., was requested to work with him. In their work they had the assistance of Miss Mabel Broun Ellis. The manuscript was prepared after a very careful and thorough study of open-air schools in most or all of the more progressive countries of the world. Fortunately, the material from Europe was collected before the outbreak of the present war. I recommend that the manuscript be published as a bulletin of the Bureau of Education. The importance of the subject and the widespread interest manifested in it justify its publication.

Respectfully submitted.

P. P. CLAXTON,  
*Commissioner.*

The SECRETARY OF THE INTERIOR.

## INTRODUCTION.

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Open-air schools represent one of the latest developments in public-school organization. They came as the result of a desire for better conservation of the health of those children who, by reason of a tuberculous affection, poor nourishment, or other debilitating conditions, were unable to profit physically and mentally by the life and work of regular indoor schools. This method of dealing with physically defective children signalizes one of the most interesting and decided changes undertaken in school management for many centuries. Indoor schools have for the most part grown and developed under the idea that teachers had to do with the minds and not with the bodies of children, while open-air schools are based on the conception that the first essential to a worthy education is sound bodily health. The former grew out of the error of assuming that mind is not closely associated with the physical body and that early mental training was paramount to the demands of health; the latter have grown out of a new emphasis on the value of health and physical soundness and recently discovered facts bearing on the nature of certain diseases and the best methods of protecting human life from the possible effects of these diseases.

Naturally, as in the case of all progressive movements, many direct and indirect causes have contributed to this end. Chief among these were the discovery of the germ which causes tuberculosis and the great value of an out-of-door life and nourishing food in the treatment of those afflicted with this disease. The world is directly indebted to Dr. Koch, of Germany, for the former and mainly to Dr. Trudeau, of America, for the latter. In addition to the impetus gained by these discoveries the study of children both in health and disease has been encouraged in the past generation as never before, and hygiene is now recognized as of more worth than medicine.

No one with an unbiased mind can read the accounts of the history of open-air schools and the results they have already achieved without in some measure forecasting the time when the same conditions and the same sort of care will be extended to the whole school population. Surely there is greater reason for keeping the school children of this or any other nation from sickness than there is for attempting to save them after their health and physical vigor have been im-

paired. The opinion expressed by the late Dr. Arthur T. Cabot that in the future "all schools will be open-air schools," is in line with this changed emphasis, and when considered in connection with the results already attained in open-air schools seems eminently reasonable.

The chief purposes of this bulletin are to record something of the history and progress of the open-air school movement, to point out some of the results which have been attained through this means of dealing with delicate school children, to designate in some detail the programs followed in such schools, and to bring together in a convenient form other information which may be needed by those who are planning to organize and equip schools of this character.

# OPEN-AIR SCHOOLS.

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## Chapter I.

### SITES AND BUILDINGS.

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The original open-air school was located in a forest, and was called a forest school. This fact has had an important influence in the selection of sites upon which open-air school buildings were to be built. The forest plan has not been followed generally in the United States, however. In a few notable cases parks and large grounds have been utilized for this purpose, but many American open-air schools are on the roofs of city buildings, in old school-houses, or on vacant lots and beaches.

There are some special needs in open-air schools which can not be satisfied short of large grounds, where nature study may be undertaken readily and naturally, where gardening is possible, where playgrounds are ample, where there is room for rabbit hutches and cages for pets, and especially where the air is clear and pure, and where the children may be removed from the distressing noises of city life. Children in open-air schools are usually sick or anemic because they have been cheated out of the birthright all children should have—fresh, clean air, opportunity to get acquainted with the lives of plants and animals, good food, and a chance to play in the open; and roofs, vacant lots, or other available in-town spaces for getting the children out in the fresh air are only makeshifts, after all.

In Europe the arrangement of buildings and the choice of sites for open-air schools have followed in general the lines laid down in the original open-air school at Charlottenburg, Germany. The Charlottenburg School is situated in a beautiful pine forest. The ground is rolling and sandy. The buildings are of inexpensive construction, but are carefully planned for the purposes of the school and are grouped in convenient relation to each other as well as to the outdoor features of the place. The immediate grounds are not only ample for the buildings, but they afford room for both vegetable and flower gardens, each child having an individual allotment. There is also an open-air gymnasium surrounded by an

FIG. 1. Model of an open-air school and grounds on the unit plan, as exhibited at the Panama-Pacific International Exposition, San Francisco, 1915.

inclosure, where the children have sun baths in connection with open-air exercises. Another section is set apart for play, where the children are allowed to engage in games and sports of their own choice. They build wonderful trenches and construct buildings and other devices to suit individual fancies. Adjoining this, and usually merging into it, is a section where pets of different kinds are kept. The children not only care for the pets but help to build cages, pens, and houses for them.

The forest extends in every direction from the school and affords large possibilities for walks and nature study, such as the obser-

FIG. 2.—The first modern open-air school, Charlottenburg, Germany.

vation of seed distribution, study of plant and animal life, the change of seasons, and other aspects of nature.

Experiences gained in these different activities are utilized in drawing work, arithmetic, geography, reading, and in fact have a bearing on nearly all school subjects. Drawing lessons, as well as arithmetic, have an added interest when the work is applied in the construction of a pen or house or some article of convenience or comfort for the children's animal friends.

The whole plan and conception of the school enables the teachers to make an ally of nature in their great work of education. These



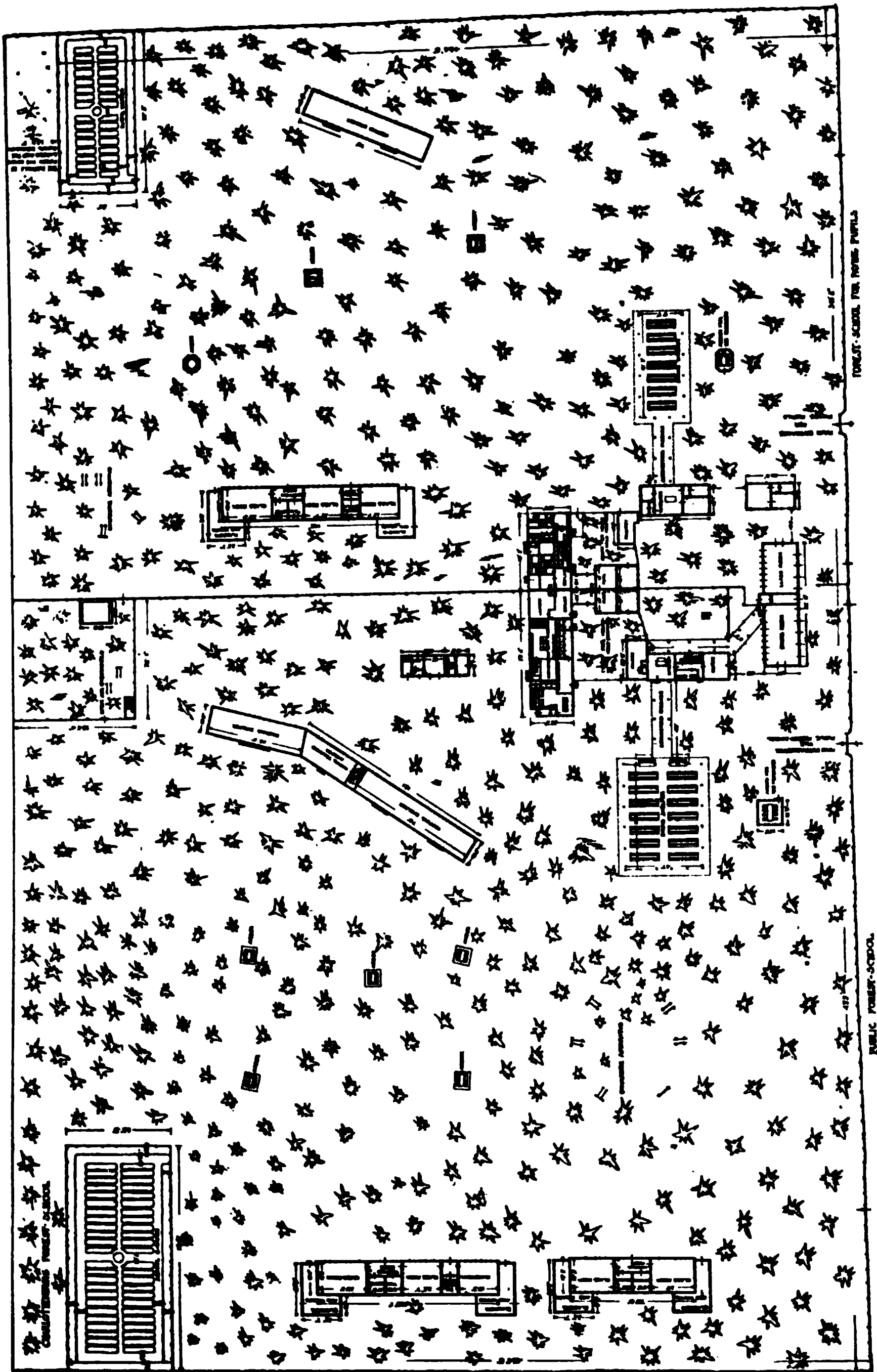


FIG. 3.—Plan of buildings and grounds, "The Forest School," Charlottenburg, Germany.

features not only keep the children in the fresh air and sunshine, but bring them into direct contact and cooperation with the primary and fundamental interests of a child's life.

While few sites for other European schools are as ample as that of the Charlottenburg School, the general features are much the same. At the Uffculme Open-air School, near Birmingham, England, the gift of Mr. and Mrs. Barrow Cadbury, the immediate site is adequate for the school buildings, for gardens, playgrounds, and quarters for the pets and gives ample space besides. Moreover, it adjoins the estate of Mr. and Mrs. Cadbury, and the open-air school pupils are allowed access to the grounds. Shooters Hill Open-air

FIG. 4.—Uffculme Open-Air School, Birmingham, England. The school garden.

School, near London, is also located near a large forest. The chief medical officer of the Board of Education of London, in his report for 1913 (p. 258), outlines the considerations which in his opinion should enter into the establishment of open-air schools, and, in general, the schools of England have developed as he indicates. This report states:

The site should be sheltered, though fairly open and easily accessible. One acre of land should be available for, say, 50 children. The buildings should be inexpensive and constructed in such a way as to allow of cross ventilation and maximum admission of air, with adequate protection against stormy weather. In winter some means of heating is advisable. The classrooms must be adapted for the various educational methods of the open-air school, including manual work. These classrooms should be constructed for 25 pupils. The

school premises should consist of an administrative building, classrooms, and a resting shed. On the question of administrative detail, the requirements

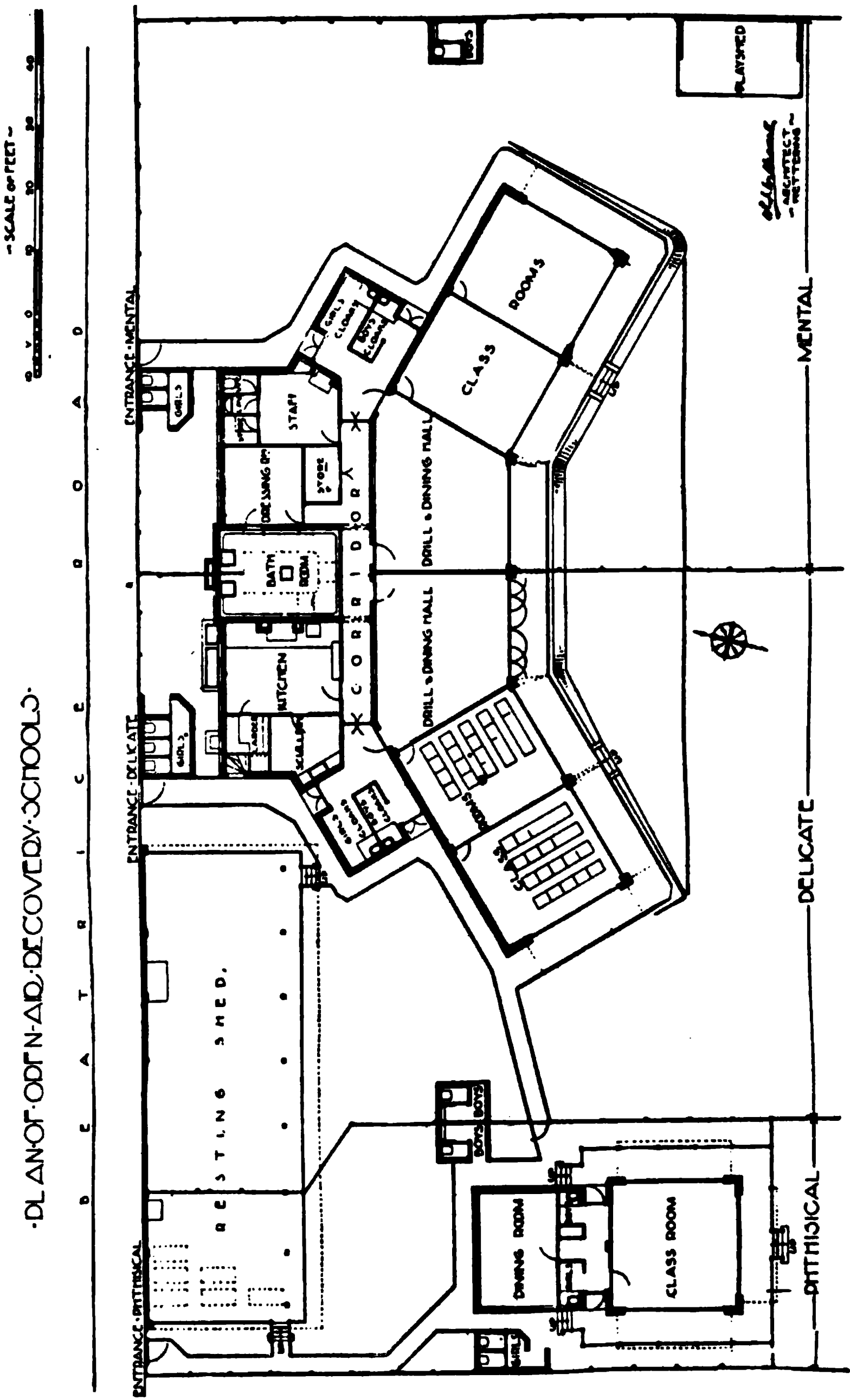


FIG. 5.—Plan of buildings and grounds, Open-Air Recovery School, Kettering, England. This plant accommodates 40 tuberculous, 40 delicate, and 40 mentally subnormal children.

are a kitchen, diningroom, doctor's and nurse's room, and provision for shower baths. As a usual thing, the schools abroad are established for a considerable number of children, 100 or more.

The same report states—

that there should be a head teacher for from 120 to 150 children and a teacher for each 25. The teacher selected should have special knowledge of nature study, manual training, hygiene, and physical exercise. There should be a fully qualified nurse and the necessary assistants for cooking and serving meals and for bathing, say, 4 women for 120 children.

The earlier open-air schools in the United States made their beginnings in less favorable quarters than are enjoyed by the European schools. In this, as in many other enterprises in the United States, private initiative led the way, and such expedients as unused school-

FIG. 6.—Interior of Providence (R. I.) Open-air School.

houses, ferryboats, roofs, porches, tents, and remodeled buildings were pressed into service.

The first open-air school in the United States was established in Providence, R. I., in 1908. Like most open-air schools established since, it had its impetus and its initial support wholly or in part from individuals and organizations actively engaged in antituberculosis work. Dr. Mary S. Packard, whose letter is quoted below, had been connected with charity organization work for a number of years and had been instrumental, with Dr. Ellen Stone and others, in starting the Providence League for the Suppression of Tuberculosis. In the summer preceding the inauguration of the Providence

school they had taken a group of children who were predisposed to tuberculosis to a country place belonging to a friend. They encountered numerous difficulties in carrying on the project; but their earnestness and zeal and their ability to demonstrate to the community that these children were in no sense a menace to the health of others allayed the fears of the community and made possible the establishment of this summer school.

Dr. Packard's letter to Dr. Jay Perkins, president of the Providence League for the Suppression of Tuberculosis, written August 14, 1907, is as follows:

Do you think it is too early to attempt to have a single small school, necessarily ungraded, for those [tuberculous] children, arranged so as to approxi-

FIG. 7.—Sea Breeze Hospital, Coney Island, N. Y.

mate an out-of-door school? It would, of course, be an experiment and in all probability would not be undertaken by the public school authorities; but we have thought it might be run very inexpensively, and that possibly the Providence League for the Suppression of Tuberculosis or some other society would bear the expense of housing and heating, and that the city would supply a teacher. Probably there are some tuberculous teachers. The building would be very simple; it is suggested that the horse sheds of the Friends' meeting-house, on North Main Street, could be arranged for it, and that the owners would be willing, since they are using their meetinghouse so little and have given the yard for a playground this summer; or the little house on Conanicut Street, now used as a pure milk station, probably could be had rent free.

We shall have about ten children at the camp who will soon have to go back to the ordinary schools, or would be at home in close rooms, and you will know of many more than these who should have an out-of-door life either during the day or the night, if it is impossible to give them both. Now that the

general interest in the prevention of tuberculosis is so much greater than ever before, do you think that some such experiment might be started this fall?

This letter met with an enthusiastic response. The Charlottenburg School at this time was only in the third year of its existence, and little or no data were at hand for guidance and direction. However, the school department of Providence had already shown its progressiveness by establishing the first ungraded room in the United States for retarded children, and the board members were alive to the educational importance of this new opportunity of rendering real service to children in need.



FIG. 8.—Outdoor activities at Sea Breeze Hospital, Coney Island, N. Y.

The League for the Suppression of Tuberculosis stood ready with offers of assistance. A schoolhouse not at that time in use, and centrally located, was requested for the purpose of a fresh-air school, and the committee on city property not only granted this request, but made all the changes desired, which included the remodeling of windows of one room and the installation of stoves for heating and cooking. These arrangements were so carefully made that they have been continued almost without change up to the present time.

Another similar effort was going on at about the same time in the city of New York. For many years the Association for Improving the Condition of the Poor had been taking children from the congested districts of New York to Coney Island for recuperation

during the summer months. Among the thousands of children benefited were many children suffering from tuberculosis of the bones and joints. In order to meet the needs of these children, the association established at Sea Breeze, Coney Island, in the summer of 1903, a seaside tent camp for the treatment of children suffering from tuberculosis of the bones and glands. The New York Board of Health estimated that there were from 4,000 to 5,000 children under 15 years of age in that city suffering from nonpulmonary forms of tuberculosis, and that at least three-fourths of these children were to be found in the tenement districts.

The report on the experiment, written at the close of this first summer, states:

It was a pathetic group of children who came to us in June, so weak and emaciated that it was necessary to send one adult with each child. It is not an exaggeration to say that at the present time it would be difficult to select among normal children in our tenement district 50 who look as happy and as rugged as those among our earliest patients who have remained until the end of the summer. \* \* \* These children have lived out of doors practically every hour. Each of the four dormitories accommodates 12 children and is ventilated with 15 windows always open, so that even at night the ventilation is thorough.

In 1904 the New York Board of Education sent a teacher to instruct these children. The original purpose was not to conduct a school, but to take a group of these little children and restore them to health, not only gratifying their desire to play like other children, but putting them on the way to useful citizenship.

The results achieved at Providence and Sea Breeze, reinforcing as they did those at the Charlottenburg School, marked the beginning of a rapid development of open-air schools in the United States. Boston, Mass., made use of a park refectory; New York City secured a ferry boat and converted it into an open-air school. In other cities tents and buildings of inexpensive construction were pressed into service.

So far in the United States the open-air school has attempted, first, to take care of anemic, undernourished, debilitated children. These schools have had the problem of providing not only for proper classrooms but facilities for kitchen, diningroom, bathing, rest period, and for the physician's and nurse's use. A tent structure or cheap building often serves satisfactorily for the classroom work, provided there is near it a building which will afford these other facilities which are indispensable.

The first open-air school in Chicago was conducted by the Chicago Tuberculosis Institute in cooperation with the school board in the summer of 1909. A tent was placed in the yard of the Graham School and this, together with rooms in the school plant, enabled the organizations to carry on a summer's work for 30 anemic and



debilitated children. The results of this experiment were so gratifying that the friends of the movement felt that Chicago should go forward and conduct a year-round school.

The best available site that could then be found was the roof of the Mary Crane Nursery, which is located almost at the exact center of population of Chicago. Large numbers of children needing special care lived in the congested tenements surrounding this building. The roof equipment was not designed or constructed for open-air school purposes but had been used as a fresh-air station for sick babies during the summer time. The building was a tent-like structure 14 by 25 feet, built of asbestos board. There was also a canvas

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FIG. 9.—Site of first year-round open-air school, Chicago, Ill.

shelter of about the same dimensions, which was used to accommodate the children during the rest period. Outside this tent was an inclosure which afforded some space for recreation. The kitchen and diningroom were located in the rooms of the nursery, one floor below. There was no heat on the roof. The floor of the schoolroom was made of common boards covered with linoleum. The windows were hinged from the top and could be raised and lowered by pulleys and ropes from the inside. These windows thus formed an open zone for air, but could be closed from any side against the storm and wind.

The room was equipped for 25 children, but from the beginning there was always a large waiting list, and the number sometimes

rose to 30. During the first year the children ranged from 6 to 16 years of age, and from the point of view of their educational progress represented eight grades of the elementary school.

Two years later another school was opened on the roof of the Hull House Boys' Club, which adjoins the Mary Crane Nursery. On this roof there is now a locker room, lavatories, shower baths, and toilets, and a large resting shed which is anchored to a frame made of gas pipe. The building here is also of asbestos board. This site connects with another roof, that of Bowen Hall, another of the Hull House group of buildings, and this roof is used as a garden.

FIG. 10.—Roof garden, Elizabeth McCormick Open-air School No. 2, on roof of Bowen Hall, one of the Hull House buildings.

where both vegetables and flowers are grown. The dining room and kitchen are on the top floor of the Hull House Boys' Club, just under the roof structure.

In the United States many cities have adapted ordinary school-rooms to open-air school work by simply opening the windows. In a room where there is a ventilating system the out duct should be cut off when the windows are opened. When this detail has been observed, no interference has occurred with the ventilating system. Care should be taken also that children do not sit in immediate drafts and that the wind does not blow directly on them. This is easily taken care of by using screens or ventilators to deflect air

currents upward. Sometimes an alteration in the windows is necessary, or the removal of a side wall and installation of a different type of windows may be desirable.

In the original open-air school in the United States, at Providence, the windows were hinged at the top and could be swung to the ceiling by means of a pulley. In the open-window rooms in Chicago a canvas ventilator has been found to be one of the most practical ventilators. The principle of this ventilator is the same as that of ventilators in commercial use; the difference is that it allows the windows to be half open and provides a greater intake. In New

FIG. 11.—Open-window room, New York City. Double-hung window.

York City, where there are now more than 200 open-window rooms, the double-hung window is the type most generally used.

Dr. John B. Todd, of Syracuse, N. Y., advocates a ventilator made by stretching unbleached muslin over a frame and operated after the manner of an ordinary wire screen. This slides up and down according as it is desired to have the upper or lower sash open.

In selecting locations for open-window rooms, it is preferable to have those with two exposures. South and east or south and west exposures, other things being equal, are most desirable. In the first open-window room in the city of Chicago one room was used both for recitation work and for the rest period. The desks were removed and were replaced by tables and chairs. The tables and chairs could be pushed to one side to allow placing the cots for the rest period. These cots were kept in a corner or on one side of the room.

FIG. 12.—Tables and chairs replace stationary desks in the first open-window room at the Franklin School, Chicago, Ill.

The children wore their ordinary street wraps. It was found necessary, however, to provide extra clothing for schoolroom use, and now an Eskimo coat and lumberman's boots are furnished by the Elizabeth McCormick Fund for each child in an open-window room. The temperature averages about  $55^{\circ}$  in these rooms in the winter months. There are now 15 such classes in Chicago.

In some of these open-window rooms a portion of a cloakroom is partitioned off and converted into a kitchen. In other instances a gas plate is placed in a corner of an ordinary schoolroom which is used as a diningroom. A good-sized kitchen cabinet will hold the necessary dishes and cooking utensils. There has been no difficulty

so far in the schools where open-window rooms exist to find space that satisfactorily accommodates these added features.

The open-air school movement has reached a phase where it is receiving a permanent embodiment in definitely planned and constructed buildings for the purpose. A number of cities have already built permanent buildings and others have them in contemplation. Still other cities are modifying their schoolhouse architecture and are providing for special open-air classes and more adequately providing for fresh air and sunshine in all the rooms.

Besides the definite details of planning and constructing buildings to accommodate the different features of open-air schools, a number of cardinal points should be kept in mind. A mistake often made in open-air school structures is the use of wide overhanging eaves instead of windows to give protection against wind and storm. This not only fails to give control of these elements, but has the great disadvantage of shutting out the sunlight in winter and the free movement of air in summer. There should be regular windows or canvas covers for such openings, preferably windows, because it becomes necessary at times to close the building on the side from which the storm or wind is coming.

Dr. I. N. Woodruff, medical director of open-air schools in New York City, calls attention to the difficulty of constructing out-of-door classrooms so that they will be satisfactory in both warm and cold weather. He says:

The type of classroom required in warm weather is one in which there is a maximum amount of air movement and in which the roof is so constructed as not only to shut off the sun's rays, but with an air space to act as an insulator to prevent the air underneath the roof from becoming too heated.

For this and other reasons Dr. Woodruff considers that most of the classrooms for anemic children in New York are open-window rooms rather than outdoor classes, and says that for New York City children he distinctly prefers them to the outdoor classrooms.

The site for an open-air school should be well drained and supplied with abundance of pure water. An open-air school should not be located on a bare hilltop, nor set in a damp, shaded valley. One naturally associates an open-air school with trees and rolling lawns, with abundance of sunshine over all. An ideal situation can not be found short of the outlying country sections of the city. The problem of transportation needs to be solved. A natural forest in some accessible place, yet out of the main currents of the hurry and worry of modern life, seems to offer the best opportunity to meet the hygienic needs of such children as are gathered together for open-air school work. The presence of the trees stimulates the children to an observation of nature and begets in them a love of

outdoor life, which is of vital importance for them if they hope to reach any large degree of strength and usefulness.

The orientation of the open-air school building, despite the fact that many more liberties can be taken in its construction than in that of the ordinary classroom structure, nevertheless calls for certain common features. There is no value in useless exposure to winds and biting weather. There is value, however, in sunshine and in fresh, pure air, wholesome food, and abundance of quiet, undisturbed repose. It is important, therefore, that structures used for open-air work should receive abundance of sunshine, yet not so much as to interfere with the children in reading, writing, or any other task requiring close application. It is therefore justifiable to open a rest shed toward the south, so as to get a full amount of sunshine, if only the eyes of the children while reclining may be shaded from the strong light. With proper precaution, indeed, it is better for children to sleep and rest in the sunshine than in the shade. When, however, the children are working at their books, the same rule for proper lighting of the classroom, that is, receiving the light from the left, to prevent the direct rays of the sun from falling across the page, is applicable. Open-air classrooms ought to get their main light from the east or west, so that there will be a thorough sunning each day, and at the same time a chance to regulate the light in such a way as to prevent eyestrain.

Some heat is desirable in classrooms in open-air schools, especially in the northern latitudes of the United States. The diningroom, kitchen, showers, and toilets should always be properly heated. Many open-air schools have no heat in the classroom, but this makes it necessary in cold weather to use soapstones, extra foot covering, electric warmers, or other devices. Even these expedients, though they incur inconvenience and expense, are preferable to a schoolroom kept air-tight in order to conserve the heat.

If heat is introduced into an open-air classroom, care should be taken to avoid the old-time mistake of closing windows and keeping them shut in order to conserve the heat. The children must be kept comfortable; but this can be done by proper attention to clothing, exercise, and food. It is an advantage to be able to modify the temperature in cold weather, but open-air school teachers must see that the air is kept fresh and stimulating, and that the stove or heating plant is made to serve, not to dominate. The air must be kept fresh and pure.

Even permanent open-air school buildings are of comparatively inexpensive construction. The first open-air school in St. Louis, Mo., was located outside the city, on a lot which commanded a good view and which provided space for play and for gardens. Its first building was of a simple shack construction, and here the early years of

the school were spent. One teacher has been in charge since the beginning and has been able to keep in personal touch with all the children who have been through the school. The success of this school and the need of additional facilities have led the school authorities of St. Louis to secure permanent grounds in the city and to enlarge the work. They purchased a large dwelling occupying a block which adjoins the Harris Teachers' College. The dwelling-house has been remodeled and will furnish quarters for the dining room, kitchen, showers, lockers, nurse's and doctor's rooms. The ground plan of this new school is shown in figure 13. The plant is to accommodate 175 tuberculous children. Three one-story buildings will project as wings from a loggia which provides a covered passage between the different buildings and connects with the main building. Heating and other service pipes run in the floor of this loggia and

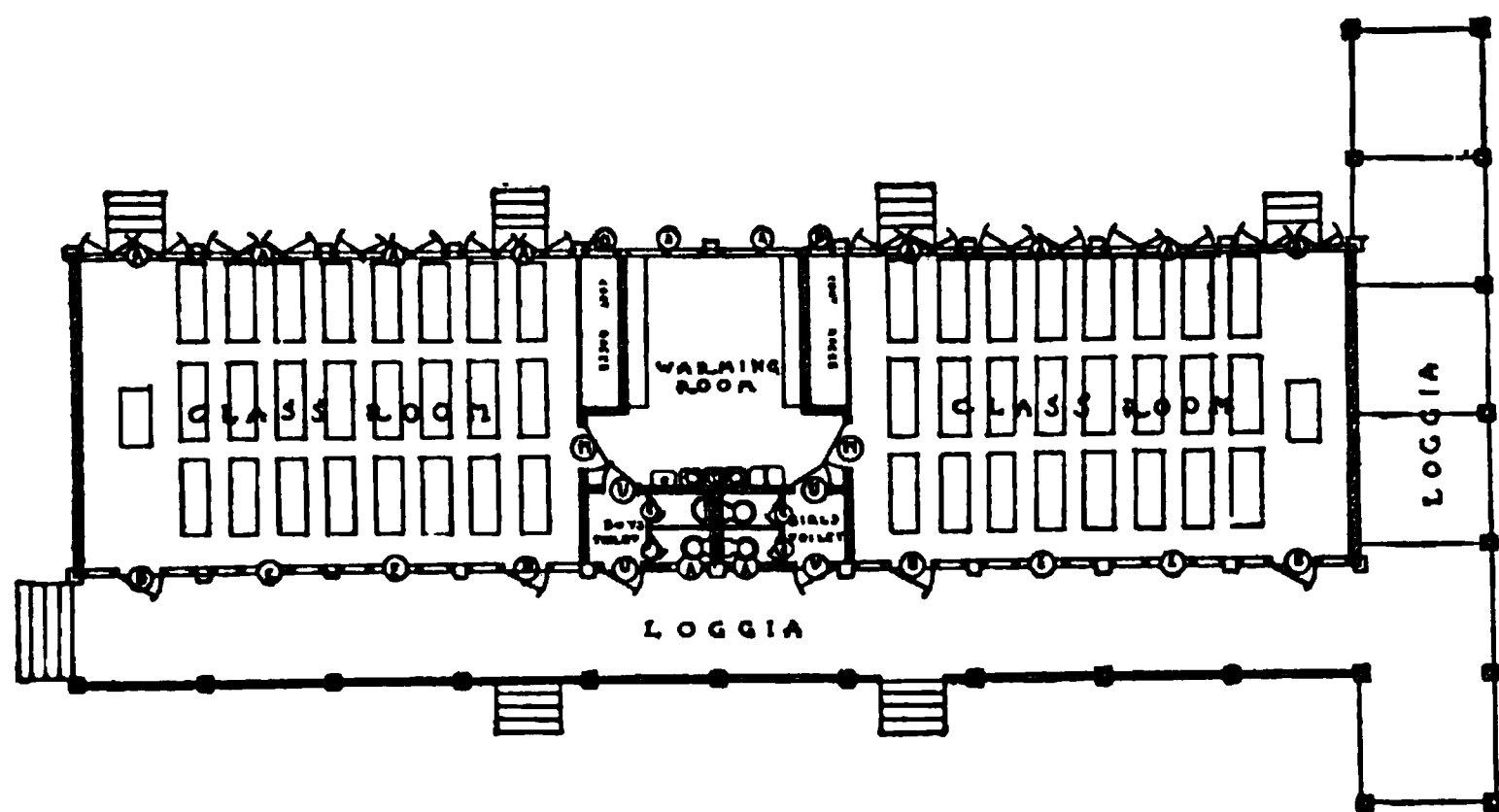


FIG. 13.—Floor plan of open-air school unit, St. Louis.

under the floors of the classrooms. The cost of this building will be \$37,500, and the estimated yearly cost of operation \$26,250.

In September, 1912, Mr. Frank B. Leland presented to the city of Detroit a building and grounds known as the Nellie Leland Open-Air School. (For building and plans, see figures 14 and 15.) It was first constructed to accommodate 25 children, but in the year following it was enlarged to double the capacity and now has 50 children. Originally the expense other than the teacher and school equipment was paid by the Detroit Society for the Prevention and Study of Tuberculosis. In 1914 the city assumed the entire expense for the operation of the school.

Toledo, Ohio, has a new building known as the Cherry Street Open-Air School. Schoolrooms, diningroom, and kitchen are provided on the first floor; dormitories, musicroom, and bathrooms on the second floor. The schoolrooms are screened and have canvas windows open-



ing on the inside. It accommodates 60 children, 30 of whom remain at the school both day and night. Expenses of food and nurse are paid by the Anti-Tuberculosis Society. The balance of the expenses are met by the board of education of Toledo. (See figure 16.)

Columbus, Ohio, has an open-air school building, erected by the Columbus Society for the Prevention and Cure of Tuberculosis, at an expense of \$6,111. The frame building shown in figure 18 contains a large schoolroom, diningroom, kitchen, lockers, lavatories, storeroom, bath, nurse's and recitation rooms. An 18-foot porch surrounds the building. The board of education provided the site and pays for school supplies, teacher, and caretaker. The Anti-Tuberculosis Society bears the other expenses. The capacity of this school is 25.

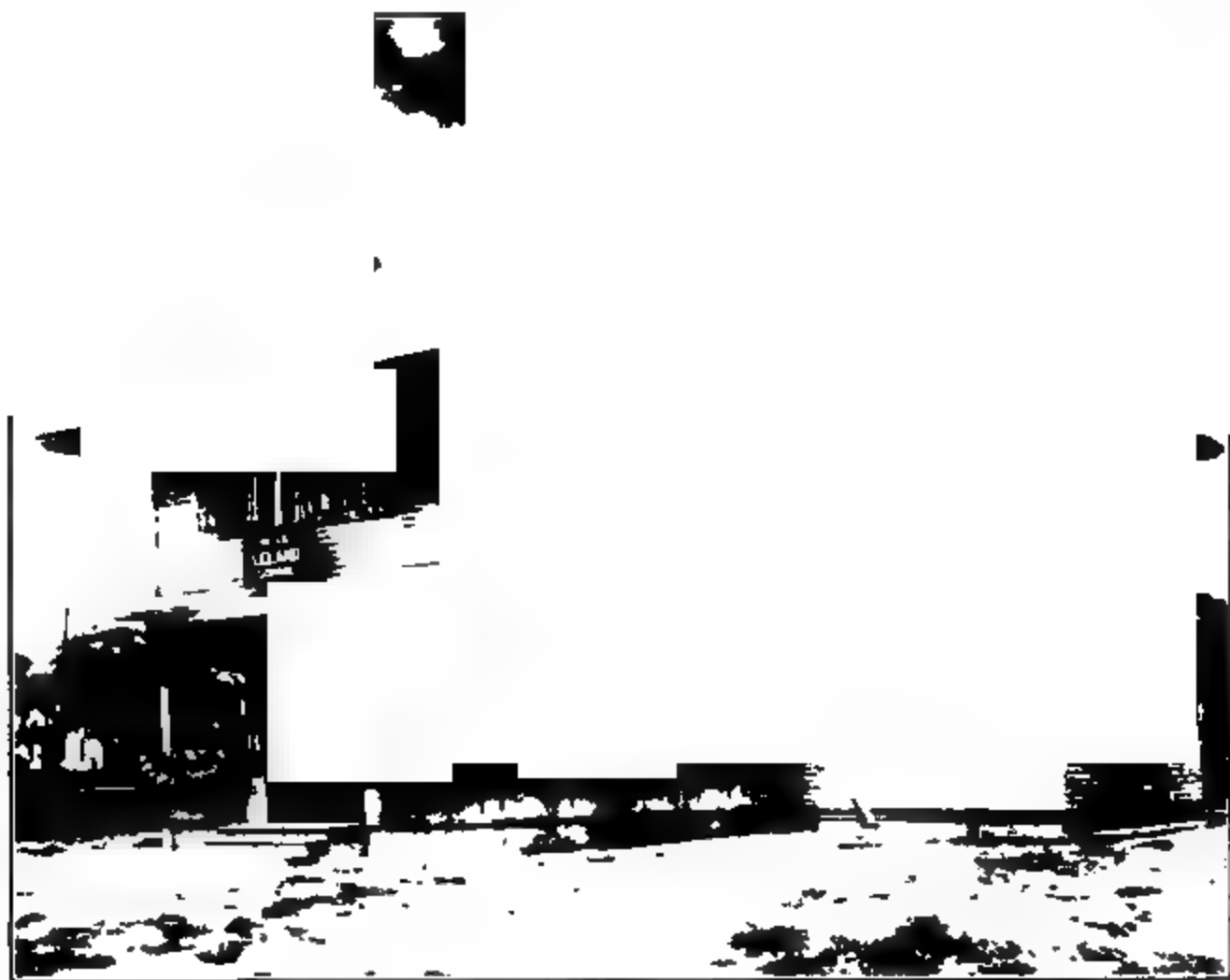


FIG. 14.—The first Nellie Leland School, Detroit, Mich.

Rochester, N. Y., is another city which began its open-air school work in a modest way and has grown through its success into permanent quarters, as illustrated in figure 19. The new building is located in a city park, 8 acres of which have been given to the school exclusively for open-air school purposes. The site is easily accessible to the cars. The present building accommodates 65 children and cost \$18,000. The plans call for the construction of an additional wing, which will enlarge the capacity of the building to 130.

In 1912 the city of Oakland voted a \$2,000,000 bond issue for the construction of new school buildings. In order that this sum might be most advantageously spent, the board of education created an honorary commission, composed of school men, architects, sanitary engineers, and sociologists, to recommend a program for schoolhouse construction. Their opinion was especially requested on gymnasias, lunchrooms, provision for the department of health developments,

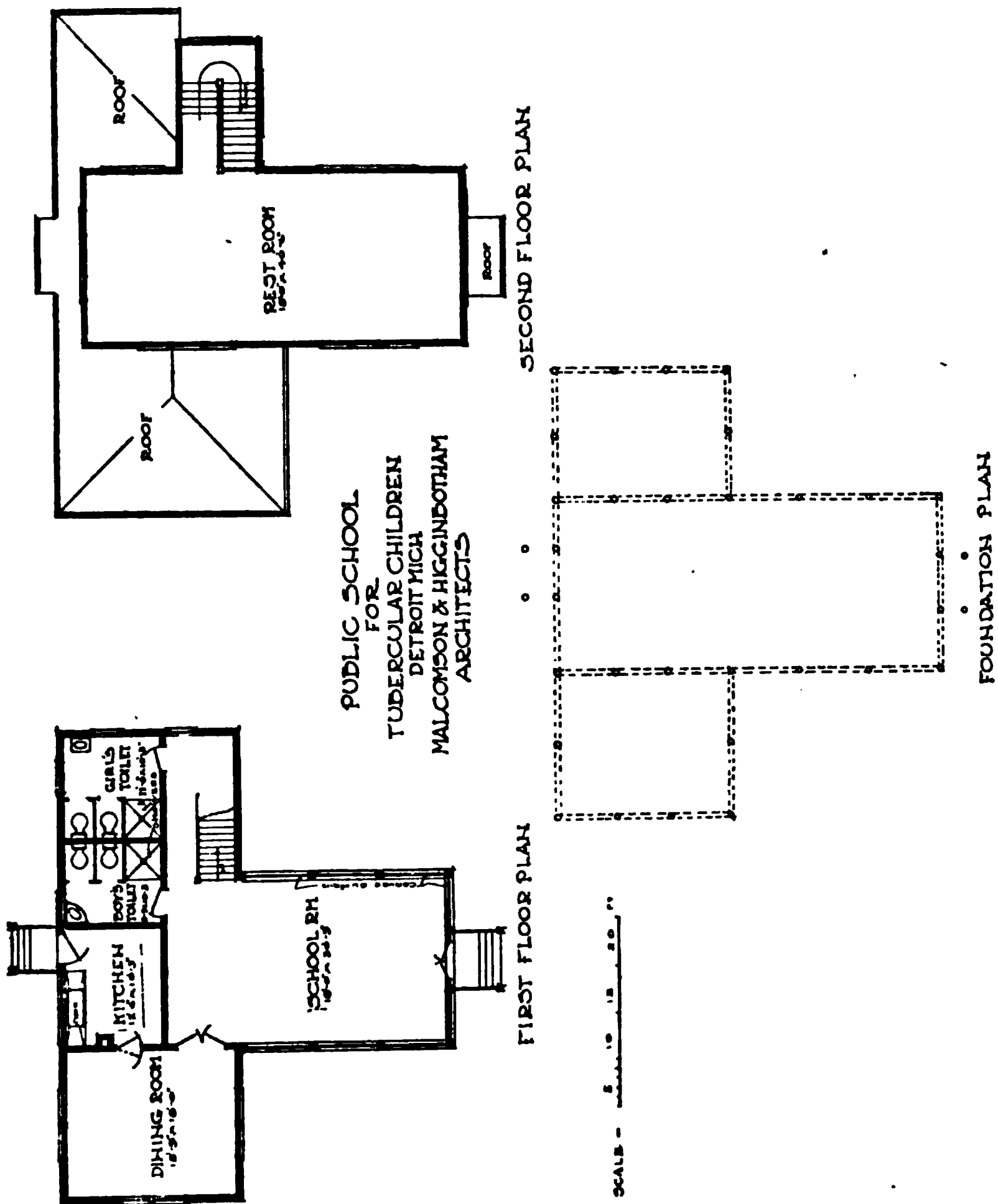


FIG. 15.—Plans of the Nellie Leland Open-air School, Detroit, Mich.

and sanitation and open-air schools. The following recommendation on open-air schools was included in the report of this commission:

In each new building there shall be at least one "open-air" schoolroom that can not be entirely closed, preferably opening to the east.

In all new buildings there shall be provision made whereby every classroom may be easily transformed into an "open-air" room, such transforming measures not to be under the control of teachers and pupils.

One or more school buildings entirely of the open-air type should be erected. All halls and corridors should be so constructed that they can not be entirely closed from the outside air.

All rooms designed as open-air rooms should be provided with some means for warming and drying. Most likely some method of direct radiation will be necessary.

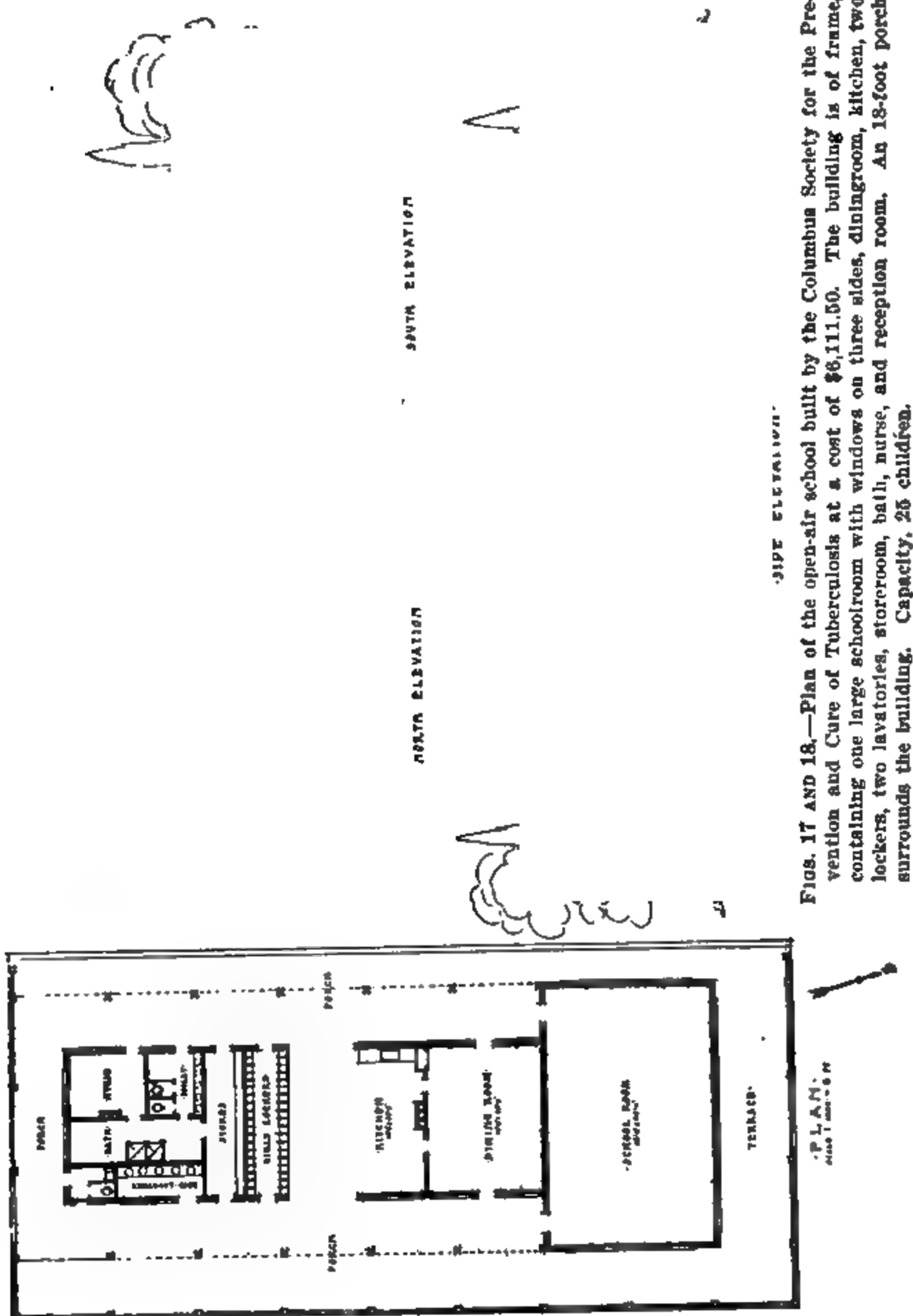
Fresno, Cal., has worked out a simple classroom structure for open-air school work that can be built for about \$500. Through a covered passageway this unit connects with others, and a completed plant that will accommodate about 150 pupils, as illustrated in figure 22, can be built at an estimated cost of from \$6,000 to \$10,000.

FIG. 16.—Cherry Street Open-air School. Toledo, Ohio.

The open-air school idea is beginning to influence the architecture of regular school buildings. A notable example in this line is the Eagle School in Cleveland, Ohio. Careful attention has been given to placing of windows, to heating and ventilation throughout the whole building, and the top floor is built for open-air school purposes. The plan of the third floor of this building is shown in figure 23.

An interesting example of an open-air school building is that at Coronado, Cal. This is a concrete structure of mission type, with French doors on one side and high transom windows on the other. One whole side can thus be thrown open. It provides for all the

children of the grammar grades, and is maintained by the public school authorities.



FIGS. 17 AND 18.—Plan of the open-air school built by the Columbus Society for the Prevention and Cure of Tuberculosis at a cost of \$6,111.50. The building is of frame, containing one large schoolroom with windows on three sides, diningroom, kitchen, two lockers, two lavatories, storeroom, bath, nurse, and reception room. An 18-foot porch surrounds the building. Capacity, 25 children.

Many such schools are being constructed throughout California and in other States where the climate is favorable. Other schools with specially designed open-air rooms are the Steele School in

Denver, Colo., and the Marr and Stephens Schools in Detroit, Mich. In Boston, Philadelphia, and other cities all the new school build-

FIG. 19. Edward Mott Moore Open-air School, Rochester, N. Y.

ings are making some provision for open-air school work, usually one or more rooms of this type being built in each schoolhouse.

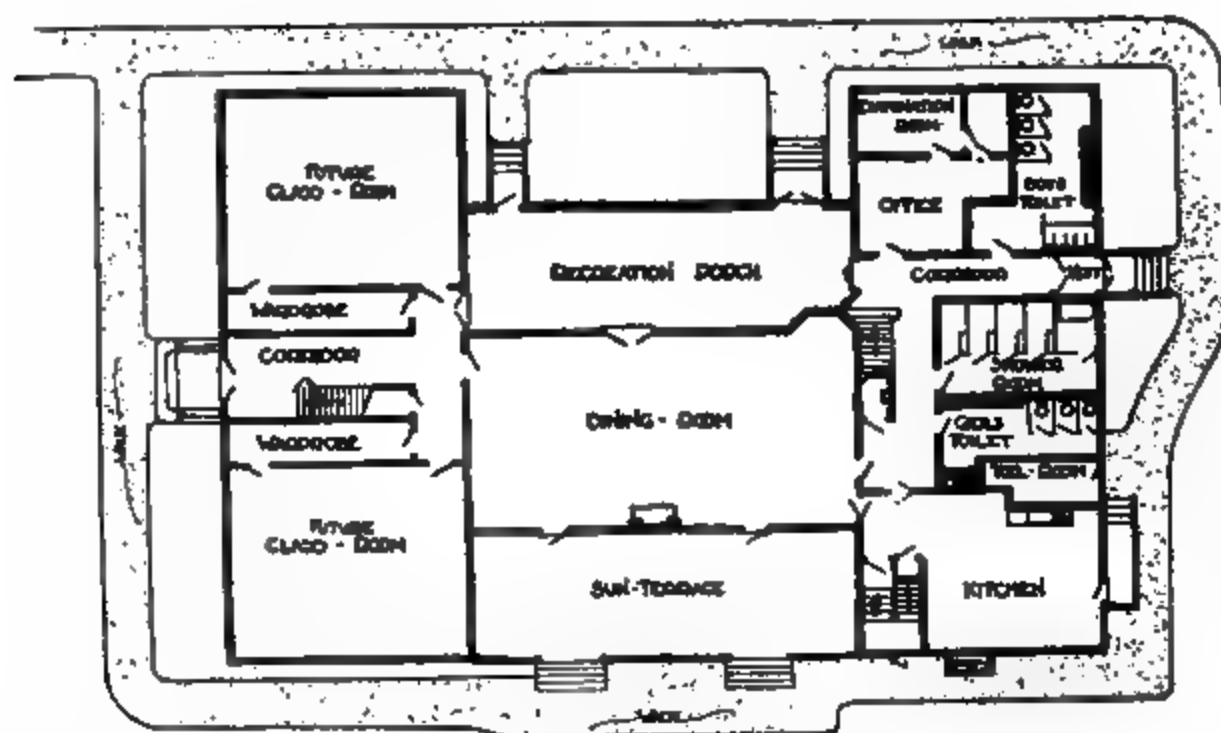


FIG. 20. -First-floor plans, Edward Mott Moore Open-air School, Rochester, N. Y.

It is natural that people should ask with increasing frequency, "Why not open-air schools for normal children?" This idea was

voiced by a pupil in one of the Chicago open-air schools who brought a little companion to the doctor and eagerly asked, "Say, Doctor, how sick has a feller got to be to get in this 'ere school?"

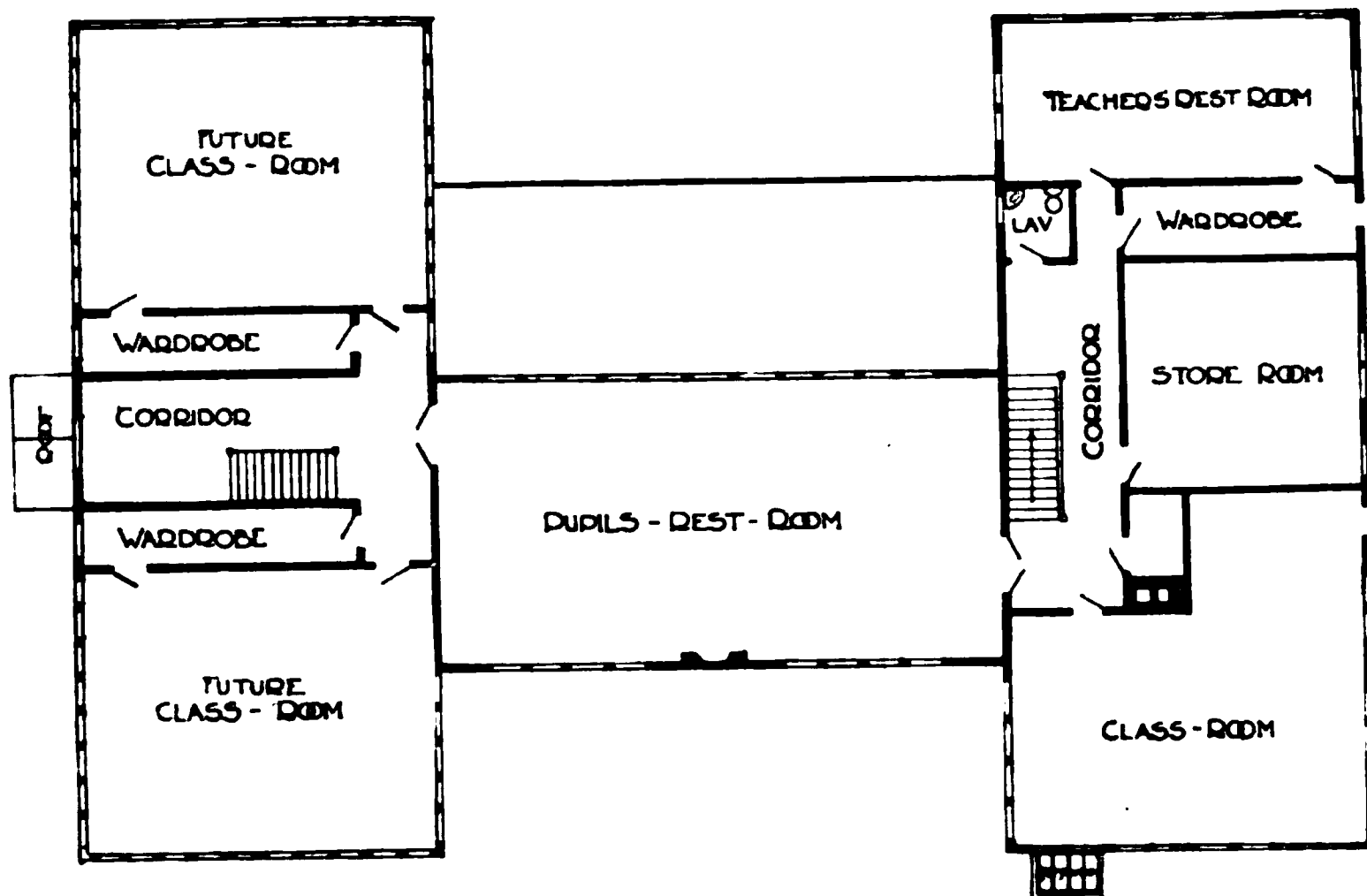


FIG. 21.—Second-floor plans, Edward Mott Moore Open-air School.

Figure 25 illustrates an open-air school for normal children, built in Canton, Mass. John C. Davis, superintendent of schools of that city, says, in the *Journal of Education* for March, 1914:

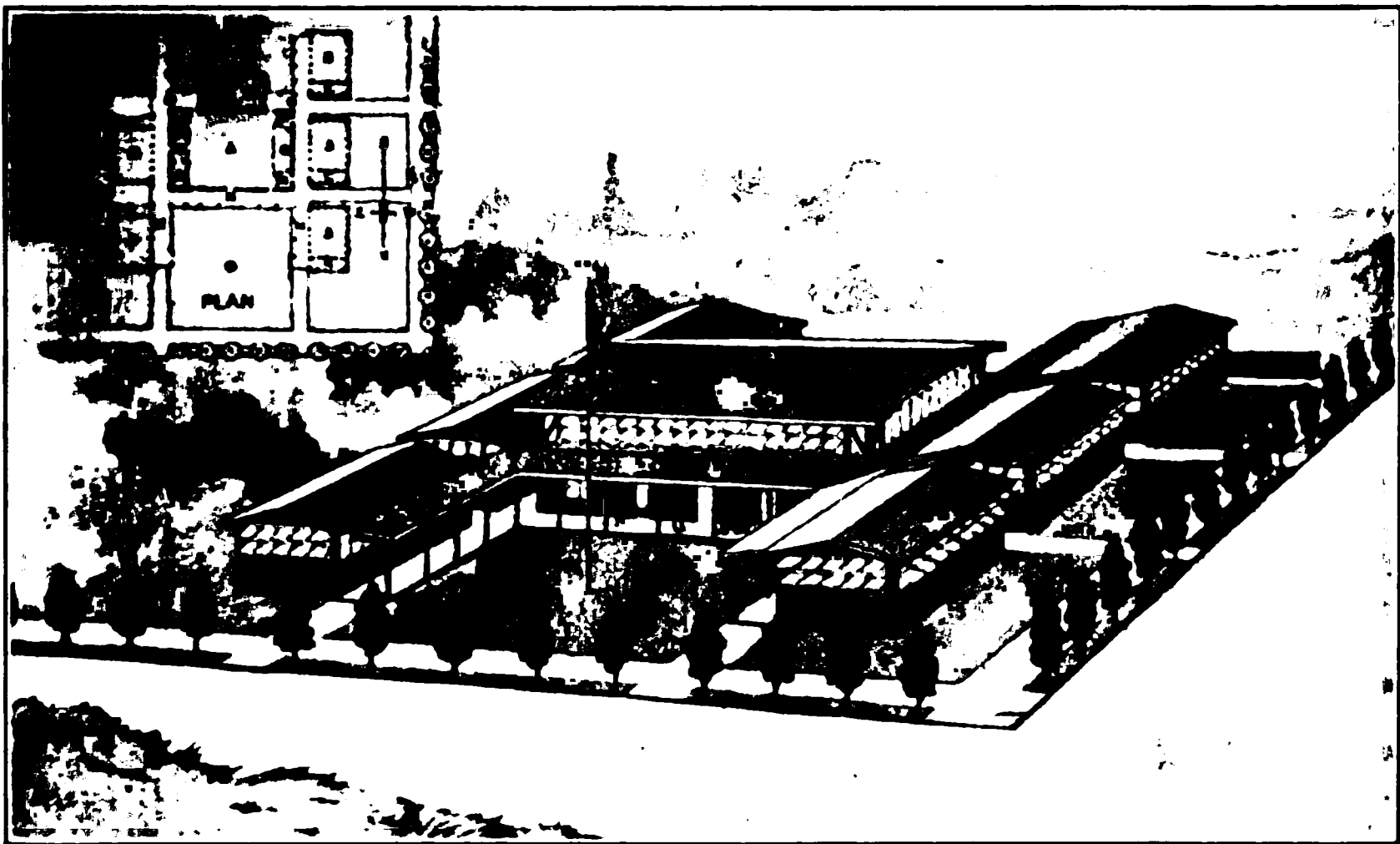
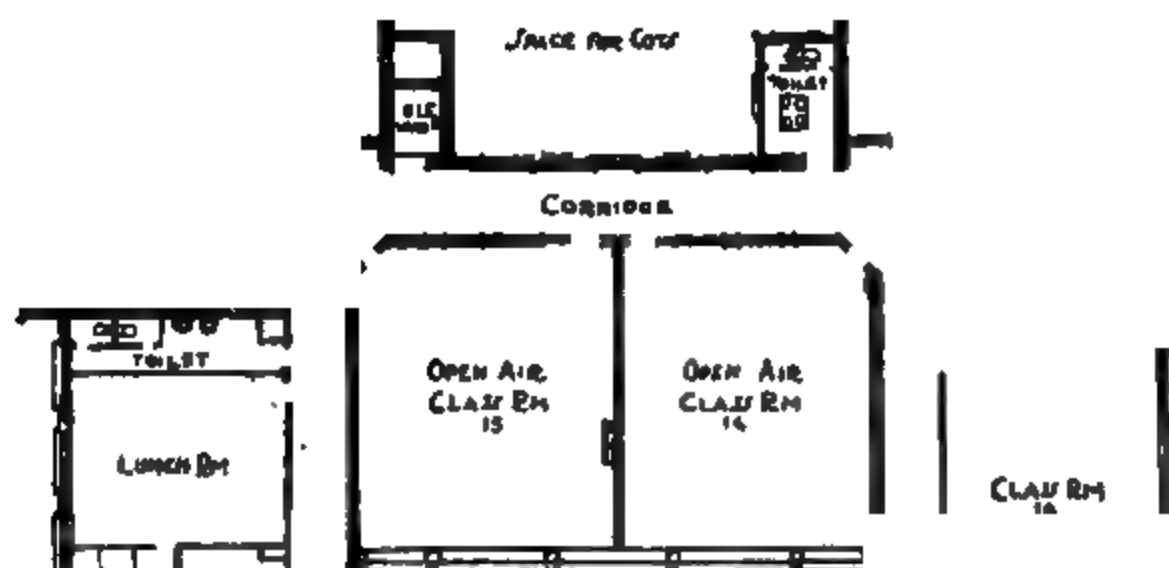


FIG. 22.—Plan for complete school plant composed of units of Fresno type. John B. Woollett, architect.

An examination of the plans of the proposed new 4-room elementary school building at Canton, Mass., will reveal several features as yet entirely new in schoolhouse construction. Perhaps the most important departure from

the ordinary is the elimination of the dark shaft for the admission of air and the substitution of the monitor roof system of ventilation which has been successfully worked out at the Massachusetts Hospital school under the direction of the superintendent, Dr. John E. Fish. It also has four outdoor rooms opening directly from the schoolrooms, where some of the school work will be carried on in pleasant weather and where all the games, folk dances, and other physical exercises will take place. There are no rooms



### THIRD FLOOR PLAN

FIG. 23.—Third-floor plan, Eagle School, Cleveland, Ohio.

in the basement to be used by either pupils or teachers. Each room has its own toilets, placed where they are easily supervised by the teacher; this arrangement does away with the very undesirable association of older and younger pupils in basement toilets.

The building committee spent a great deal of time in consultation with architects and medical experts in regard to schoolhouse ventilation. The plans of the new building call for direct heating by means of radiators and coils around the walls of each schoolroom. Fresh, cold air is admitted



through the windows, some of which open to the floor; this air becoming heated, passes along the curved ceiling and out the monitors at the top. The proper slope of the ceiling has been determined after much experimenting at the Massachusetts Hospital school, and is the angle at which air was found to flow most freely. The monitor openings are easily controlled by a wheel on each side of the room, a slight turn opening all the monitors on one side.

This building is an attempt to get more fresh air and at a lower temperature, and when the weather permits, to enable each teacher at a moment's notice to turn her classroom into what is practically an open-air room without disturbance to any other room.

Outdoor air has qualities which air admitted through stacks and over heat coils can never possess, however much humidifying and washing is done regardless of expense. If fresh air is good for anemic and tuberculous children, is it not advisable to provide fresh air as a means of keeping children well? A careful record will be kept of children in this building both as to health and progress in their school work as compared with children in other school buildings in town. This is to be the subject of a report to the school committee at a later date.

FIG. 24.—Grammar School, Coronado, Cal.

In the judgment of the building committee, this building means for the children who occupy it less anemia, fewer head colds, fewer adenoids, fewer diseased tonsils, and fewer cases of tuberculosis. It is the gospel of fresh air and sunshine applied to schoolhouse construction.

There are open-air schools, public and private, for normal children in 30 cities in 8 States. The movement has grown, and just as there has been a marked change in the construction of dwelling-houses, so the demands for better ventilation and more stimulating working conditions are modifying schoolhouse architecture. People are beginning to realize that the pleasure and profit which should be derived from meetings and assemblages in audience rooms of different kinds is greatly reduced by improper heating and ventilation. Public speakers are conscious of the added strain of talking to audiences who are in a half-asphyxiated condition. School-teachers know only too well the nervous strain and overtaxing of nerves

that come from trying to teach children who are in a similar condition. It is beginning to be realized that one of the biggest possibilities of loss in efficiency exists in the schoolrooms of the United

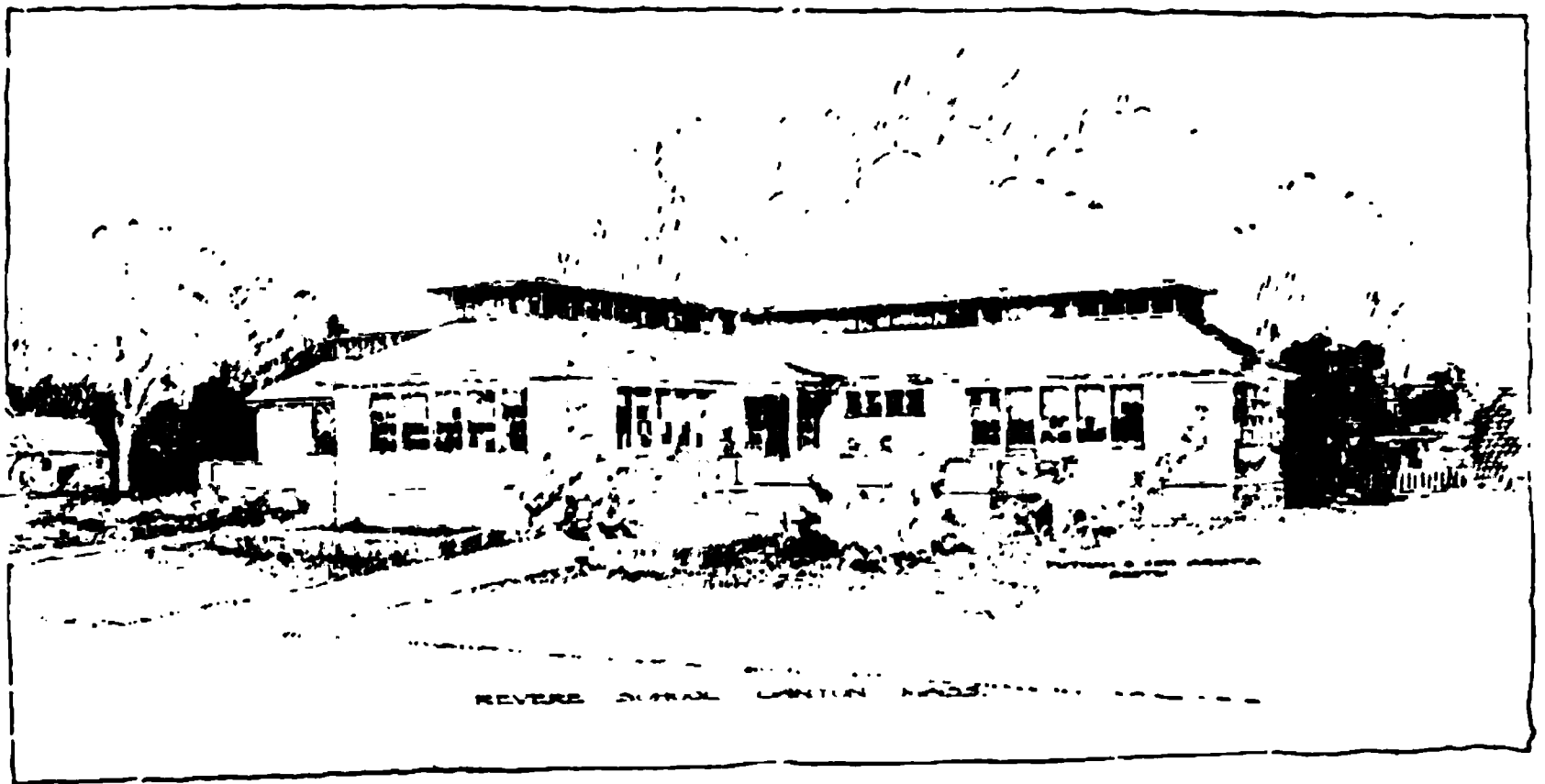


FIG. 25.—Revere School, Canton, Mass.

States, where 20,000,000 children are supposed to spend 100,000,000 hours a day every school day of the year.

It required the breath of life to make man a living soul, and it likewise requires pure clean air to make and keep a living body.

## Chapter II.

### EQUIPMENT AND COST OF OPEN-AIR SCHOOLS.

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The ideal equipment for an open-air school is still in process of evolution. The United States has been able to learn little from Europe in this regard because the European open-air schools are, for the most part, in session only from May until October, and the weather, save in the extreme east, seldom attains the severity which it does in the Northern States. American cities that carry on fresh-air schools for public-school children in very cold weather are still resorting to all kinds of experimental devices to protect the children from storm and cold. Only the undeniable benefits that come from the stimulation of the fresh cold air could justify the trouble and expense involved. The demonstrable results, however, convert the most skeptical.

#### CLOTHING.

Clothing the child properly for winter weather is no easy task. American houses are proverbially overheated; and schoolrooms, where the temperature is supposed to be regulated by law, as a matter of fact are often equal offenders. If children are dressed to be comfortable at home, they are often too thinly clad for the street or overburdened with heavy wraps. If they are sensibly prepared for the street, they are uncomfortably hot for the school.

Under any conditions safeguards must be thrown about the transition from an overheated atmosphere to the keen and nipping air of out-of-doors. This is particularly true in the case of delicate children. It is of the utmost importance to see that such children are carefully clothed and wrapped.

The method usually followed by the open-air schools is to provide wraps of one kind or another, to install a system of feeding, and to modify somewhat the program of the ordinary school by the introduction of periods for bathing, resting, and medical examinations. All these features necessitate special equipment and clothing.

The personal equipment needed varies with the location of the class. Pupils in a classroom on a roof, or in an unheated recitation room, exposed to strong winds, will require heavier and more elabo-

rate clothing than children in an open-window room receiving some heat. If the floor is warmed, it may be unnecessary to provide extra foot covering. The one essential is comfort at the minimum expense, and it may be noted in passing that a child's judgment can not always be relied upon to decide whether he is comfortable or not. Open-air school pupils soon come to take a queer pride in their ability to withstand cold. Zero weather challenges their reputation, and rather than surrender to a mere thermometer, they will assert, even while their teeth are chattering and their noses are blue and

FIG. 26.—The sitting-out bag used in open-air schools in New York and elsewhere.

pinched, that they are "perfectly comfortable." The condition of the children's hands is a good index of their comfort. It is a good plan, on cold days, for the teacher to pass from pupil to pupil and ascertain by actual contact whether or not the hands are cold. The nurse or teacher should always assure herself, by personal investigation, that each child has on warm underwear and dry stockings, and extra articles of this nature should be kept at the school for use in an emergency. Experience teaches that children who are not sup-

plied with clean, warm underclothing, good stockings, and warm shoes are much more likely to suffer from cold than are the others. Often the exterior appearance will mislead the teacher.

The open-air school outfit in general use in this country has been developed from either the sitting-out bag type or the so-called Eskimo suit.

The sitting-out bag is made from a long strip of heavy canvas, lined with blankets and doubled over at the bottom to form a pouch into which the children thrust their legs. Some bags come only to

FIG. 27.—The sitting-out bag fastens with metal snaps which are easily manipulated by children.

the waist, others to the shoulder line; but the best design is that which permits one end to fold about the shoulders in the form of a cape.

Mr. Frank H. Mann, secretary of the New York City committee on the prevention of tuberculosis, who devised such a bag for use in the New York and Brooklyn schools, describes it thus:

The garment is made of heavy brown felt. The bottom is square in shape and reinforced with extra heavy material about 1 inch in thickness to protect

the feet from cold weather. In addition the bottom is covered with a special detachable piece of canvas to insure against wear and tear.

The system of fastenings was specially devised to facilitate convenience in getting in and out of the bag. A series of snap catches all the way from head to foot makes the means of access far more practical than the old way of stepping in and out from the top. Hooks around the garment at the center enable the wearer to buckle it snugly about the waist.

Another interesting new feature is the pocket at the side provided for handkerchief and mittens.

These bags cost \$4.50 to \$5.50. They will last indefinitely. A cap, overcoat, or sweater, warm overshoes, and mittens complete the outfit, which need not, all told, cost more than \$10.

FIG. 28.—This type of wrap allows too many chances for cold air to enter about neck and shoulders of children.

The chief advantages of these bags are the ease with which the children can get into and out of them, the convenience with which a large class of different-sized children can be equipped without special fittings, the durability of the bag, and the comparatively low cost.

Unfortunately, however, the sitting-out bag deprives the child of freedom of motion. He can not go from desk to blackboard without stepping out of the bag, and in cold weather this means either getting chilled or keeping quiet. The principal of a private open-air school for young children writes:

The main objection to the open-air school work in cold weather is that, having put the children into their bags, I find in order not to spend all my time in getting them in and out I have to keep them sitting for an hour and a half without much change of position. This is contrary to all my convictions; but as there seems to be almost no restlessness or complaint I have concluded that the fresh air counteracts this disadvantage.<sup>1</sup>

The Boston schools have discontinued the use of the sitting-out bags because of inability to clean them properly after continued use.

Dr. Ayres, in *Open-Air Schools*, page 133, says:

"The children are very apt to regard them as ideal places for collecting and guarding a miscellaneous collection of the treasures of childhood, including food supplies, which they store up for future possible need."

If the sitting-out bag completed the whole outfit which the open-air schools must supply, the argument about the cost of fitting might hold good, but the sweaters, stockings, and caps must be of the right size, and this in itself necessitates taking measures of individual children.

The Eskimo outfit is a two-piece pajama suit, with hood, made of heavy woolen blankets. It slips on over the ordinary school clothing. Designed in the Elizabeth McCor-

mick Open-Air Schools in Chicago, its picturesqueness has won wide publicity, and its utility has been demonstrated by five years of constant use. It gives perfect freedom of motion, satisfactory warmth, cleans nicely, and wears well. Its disadvantages are the initial cost and the necessity of fitting the suits to individual children.

Four-pound single blankets, which are heavy enough for any but the most exposed open-air schools, can be bought at wholesale for

FIG. 29.—Sitting-out bag used at Providence (R. I.) Open air School. Excellent for lower part of body, but insufficient protection for neck and shoulders.

<sup>1</sup> Letter from Mrs. Ada C. Beckwith, New Rochelle, N. Y.



about \$4.85. They are 70 by 80 inches in size, and one will make a complete suit for a child under 12. For larger children three blankets will make two suits.

For teachers and matrons a long hooded coat may be made of the blanket material. This coat is lined below the waist and slips on easily over outer wraps or sweaters, cleans well, and is universally becoming.

Eskimo suits for children are now handled by several commercial houses. They usually run in five sizes: No. 1 for children 5 or 6 years of age; No. 2 for those 7 or 8 years of age; No. 3 for those 8 to 10 years of age; No. 4 for those 10 to 12 years of age; and No. 5 for those 13 and 14 years of age. The suits cost \$5.15. Care must be observed either in ordering or making the suits to get them large enough. It must never be forgotten that they are put on over the child's ordinary clothing, and often over the sweater or extra wrap.

FIG. 30.—The Eskimo coat should be cut large enough to go on over sweater or heavy wrap.

So simple is the pattern that groups of club women or domestic science classes can easily follow it. In Cleveland, Ohio, the girls in the sewing classes of the Technical High School made the suits. In Pittsburgh the chairman of the clothing committee of the Civic Club gave the use of two rooms in her house and the help of a seamstress for two weeks to the women of her committee who made, in that time, 26 of the suits, including two long Eskimo coats: one for the teacher and one for the matron.

If mothers wish to provide their children's suits themselves, they ought to conform to the color and style of blanket recommended by the school. To introduce a variety of stripes, checks, and colors into an open-air classroom is to destroy that element of picturesqueness which contributes no little to its success.

The boots used with the Eskimo outfit are the so-called "lumberman's boots." They reach to the knee, and the trousers of the Eskimo suit are tucked into them. The soles are reinforced with heavy canvas, which prolongs the life of the boot. They are slit over the instep, and eyelets are put in for lacing, in order to give greater ease in putting on the boots over the shoes; they cost \$1.35.

The fleece-lined, sheep-skin boot that can be bought for \$1.55 wears out too quickly to be practical for the children. Some teachers prefer it, however, to the higher lumberman's boot.

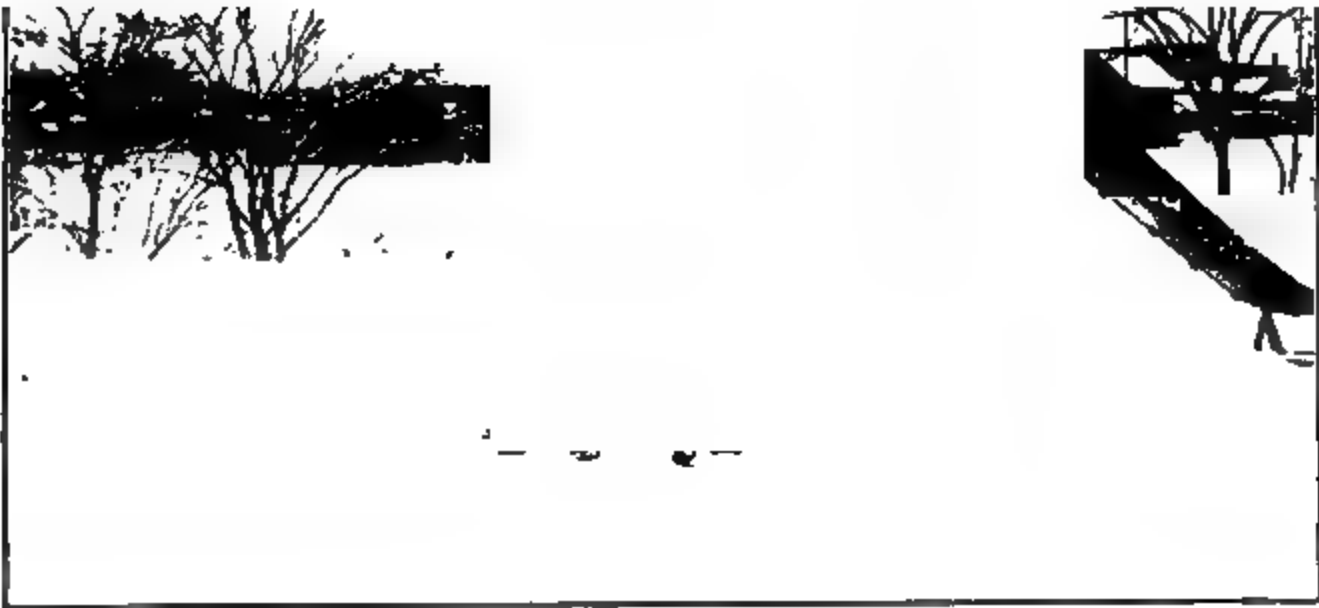


FIG. 31.—The Eskimo suit gives perfect freedom of motion.

Recently a heavy leather boot, with upper part of felt, lacing nearly to the knee, has been placed on the market. It cost \$2.50, but it will give double the service of the felt boot. It has also the advantage of permitting the child to remove his own shoes, which is not possible with the felt boot. The fact that the use of this boot requires the children to remove their shoes gives the teacher an opportunity to note whether the stockings of the pupils are wet or even damp, a very important consideration for the health and safety of the children.

The warm overshoes with leggings, which some schools provide, while doubtless warm enough for open-window rooms, do not seem sufficiently heavy to protect against the cold of the roof schools.

A 'mocha kid glove with flannel lining gives much more freedom to the fingers than a mitten, and it will not crack or chap the hands. If it fits loosely enough, the children can easily handle pencil or chalk during the coldest weather. The gloves clean satisfactorily, and with ordinary care will last two seasons. They cost about \$12 a dozen.

#### SLEEPING COTS.

The introduction of a rest period into the open-air school program brings with it the necessity for further equipment. The earliest

FIG. 32.—The lumberman's boot, re-soled with canvas. Cost, \$1.15.

American schools, following the example of Charlottenburg, provided steamer chairs, but experience shows that a child trying to sleep in a steamer chair almost invariably knots himself up into an uncomfortable tangle of arms and legs which hinders deep breathing and prevents the complete relaxation which sleep should give. The chairs are heavy and awkward to handle. It is hard for a child to lift them or move them about, and few American open-air schools have room enough to avoid a certain amount of daily adjustment of furniture.

A light-weight cot which can be folded into small compass is much to be preferred. For ease in handling and storing, a canvas cot which folds over at the head and foot into a rectangular shape is better than one which doubles up in the middle down its whole length. If the space which can be used for the rest period is limited, instead of the ordinary 6-foot cot one may buy a made-to-order cot 5 feet 2 inches long and 28 inches wide, which is quite large enough for the average 14-year-old child. Strips of heavy canvas across the points of greatest wear, and especially reinforced corners, prolong its usefulness. Such cots can be bought for \$3.

FIG. 33.—A leather boot, with upper part felt.  
Cost, \$2.50.



FIG. 34.—The ordinary steamer chair is unhygienic for children to sleep on. Note the uncomfortable positions in this picture.

Blankets or sleeping bags will be needed for the rest period in cold weather. The sleeping bag shown on this page can be made of canvas and lined with shoddy blankets at a cost of \$4.45. It launders well and lasts indefinitely. One double blanket in addition gives ample protection without too great weight. In open-window rooms the double blanket alone is equally satisfactory.

The care of this equipment requires no small amount of time and thought. St. Louis has devised a good locker in which cots, blankets, Eskimo suits, boots, and gloves can be conveniently stored away by the children themselves. Something of the sort must be provided for use at night and during vacations. Each locker space and every article of personal equipment, from cot to gloves, should bear an identifying mark. Numbers are better than initials, since articles so marked are easily transferable. Ordinary laundry labels marked

FIG. 35.—Suggested type of cot for open-air use.

with indelible ink prove satisfactory. Gloves should be fastened by tape to the coats.

#### DISINFECTION.

All articles of clothing, blankets, and sleeping bags should be laundered or disinfected at the end of the first half year of use, during the summer vacation and always at any change of ownership. Blankets ought to be shaken out and sunned frequently.

A simple method of disinfecting blankets is to sprinkle a sufficient quantity of formaldehyde over them and put them in an air-tight box for 24 hours. If a large number of blankets are to be disinfected at once, they should be hung on clothes lines in a room which can be sealed and disinfected.

The method here given is the one usually employed by the Chicago Department of Health in disinfection of school-rooms. Formaldehyde disinfection is most efficient if the temperature is above 60° F. and the atmosphere not too dry. When the air of the room (as in many steam-heated buildings) is very dry, the vent cocks of the radiators may be opened for a few minutes to permit the escape of steam into the room, or vessels containing water may be placed in the room.

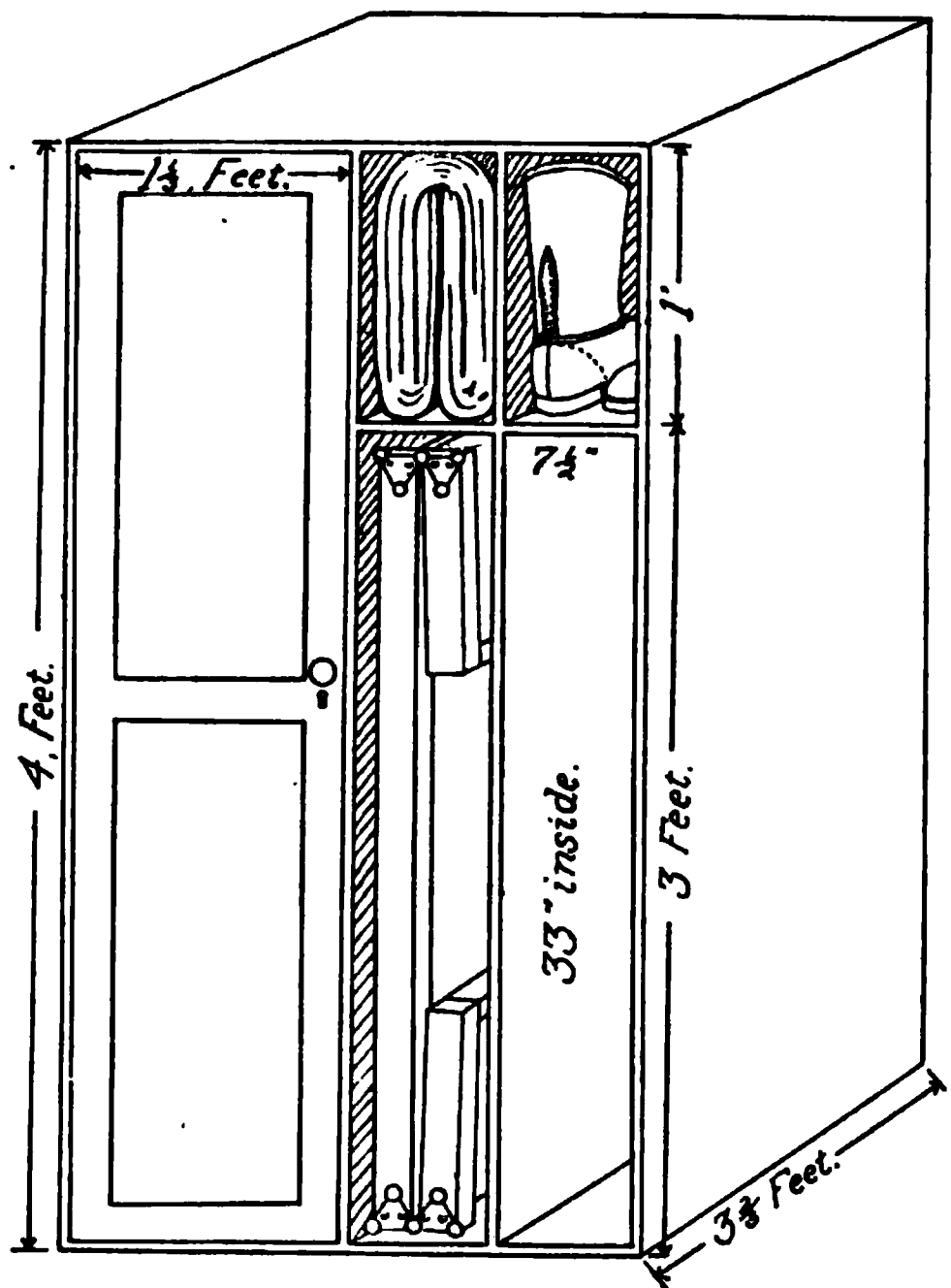


FIG. 36.—Locker devised by St. Louis Open-air School for storing cots and Eskimo suits.

1. Ingredients for 1,000 cubic feet of air space:

- (a) Paraformaldehyde, 30 grams (7½ drams).
- (b) Potassium permanganate, 75 grams (18½ drams).
- (c) Water (hot, if possible), 90 cubic centimeters (3 ounces).

2. Procedure:<sup>1</sup>

- (a) Make the rooms to be disinfected approximately air-tight by sealing with gummed paper all doors, windows, chimney flues, etc.
- (b) Freely expose all articles in the rooms; place clothes, etc., across backs of chairs, or hang them on a clothesline; open books and place them on end; open all drawers and closet doors.
- (c) Secure enough vessels or dishes, one for every 1,000 cubic feet of air space to be disinfected, put about 1 inch of water in each, and place the mixture pans in them.
- (d) Place in each mixing pan the contents of one carton of potassium permanganate (75 grams).
- (e) Measure, in the aluminum cup, 90 cubic centimeters of hot water for each outfit, pour over permanganate crystals, and let them dissolve.

<sup>1</sup> The local health department can usually be called upon for this service.





## BATHS, SCALES, AND OTHER EQUIPMENT.

In schools where daily shower baths are given, each child must have a rubber cap and two Turkish bath towels.\* Paper towels are better for all other purposes. Soap may be provided in the liquid form more conveniently than in individual cakes. Toothbrushes, combs, hairbrushes, nail files, and other small toilet articles help to impress the lessons of personal hygiene which the open-air school aims to inculcate. The individual thermometers needed in schools

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FIG. 38.—Cloak rooms adjoining open-air class rooms have been fitted up for kitchens by the Chicago Board of Education.

where temperatures are taken may be conveniently kept in a receptacle similar to that illustrated in figure 37. The top of the thermometer is thrust into a cork which fits the test tube, and the mercury end is suspended above a pad of absorbent cotton soaked in formaldehyde.

In the interests of accuracy, the school scale with measuring rod should stand in the bathroom so that the children may be weighed, and their measurements taken without the variable factor of cloth-

ing. A weighing slip of unbleached muslin protects against unnecessary exposure of the person.

### FURNITURE.

A list of the furniture needed for kitchen and diningroom for 25 children follows:

#### *Kitchen equipment.*

Articles.	Number.	Size or kind.	Approximate cost.
Asbestos mats.....	2	For the stove.....	\$0.06
Bread board.....	1	Oval.....	.25
Bread box.....	1	No. 3.....	1.50
Bin, flour.....	1	25 pound.....	1.25
Bin, sugar.....	1	.....	1.15
Boiler, double.....	1	.....	2.25
Bowl, mixing.....	1	China, 2 quart.....	.35
Broom.....	1	.....	.35
Brush, scrub.....	1	Small.....	.15
Can opener.....	1	.....	.15
Cupboards.....	2	.....	25.00
Dish cloths.....	2	.....	.14
Dish towels.....	9	.....	.90
Drainer, dish.....	1	Large.....	.55
Egg beater.....	1	Dover.....	.15
Food chopper.....	1	No. 3.....	2.00
Gas range.....	1	.....	25.00
Kettle, stock, granite.....	1	4 gallon, with cover.....	3.00
Kettle, potato, granite.....	1	10 quart, with cover.....	1.35
Kettle, tea.....	1	No. 8.....	1.15
Knife, bread.....	1	Saw.....	.25
Knife, carving.....	1	.....	.60
Knife, paring.....	1	.....	.15
Knives and forks..... pairs.....	1	Steel.....	.30
Ladle, soup.....	1	Heavy tin.....	.15
Measuring cup.....	1	Tin.....	.05
Milk bottle opener.....	1	From the dairy.....	.....
Mop and stick.....	1	.....	.50
Nutmeg grater.....	1	.....	.05
Pail, garbage.....	1	With cover.....	.50
Pail, scrub.....	1	Small.....	.20
Pan, frying.....	1	Iron, No. 8.....	.50
Pan, ginger.....	2	1-9 by 13½.....	.76
Pan, dish.....	1	Oval, 15 by 19.....	.55
Pan, roasting.....	1	With cover, 12 pound.....	1.10
Pan, sauce.....	1	Granite.....	.29
Pitchers.....	2	Enamel, 3 quart.....	1.50
Potato masher.....	1	Wire.....	.15
Salt jar.....	1	.....	.35
Scale, family.....	1	25 pound.....	1.25
Scrub cloth.....	1	.....	.15
Sink, enamel.....	1	With back and drain board.....	15.00
Skimmer.....	1	Heavy tin.....	.10
Spoon, basting.....	1	do.....	.10
Soap shaker.....	1	Wire.....	.18
Stool.....	1	3 feet high.....	1.75
Strainer, soup.....	1	.....	.65
Table, kitchen.....	1	With drawer (28 by 48 inches).....	2.25
Toaster.....	1	.....	.15
Towel rack.....	1	For dish towels.....	.25
Do.....	1	For paper towels.....	.25
Total.....	.....	.....	96.73

*Dining room equipment.*

Articles.	Number.	Size or kind.	Approximate price.	Approximate cost.
Bowls, soup.....	30	No. 30.....	\$0.17	\$5.10
Chairs.....	30		.60	18.00
Cupboard.....	2		25.00	25.00
Knives and forks.....	30	For the table.....	1.90	2.25
Ladles, soup.....	2	White enamel.....	.15	.30
Mugs, enamel.....	30	3 by 3.....	11.35	3.38
Plates.....	6	9 inches, edge to edge.....	.15	.90
Do.....	30	8 inches, edge to edge.....	11.40	3.50
Sauce dishes.....	30	4 inches, edge to edge.....	1.75	1.88
Salt shakers.....	4	Glass.....	.10	.40
Spoons, dessert.....	30		1.20	.50
Spoons, table.....	6		1.25	.12
Spoons, tea.....	60		1.15	.75
Tables, dining room.....	2	21 feet by 30 inches.....		40.00
Tureens, soup.....	3	White enamel, 1 gallon.....	1.50	3.00
Total.....				106.09

<sup>1</sup> Price per dozen.

FIG. 39.—Supply-closet kitchen formerly used as a cloak room.

In cities where open-air schools are financed by agencies other than the board of education the board can ordinarily be depended

upon to provide the schoolroom equipment of desks, blackboards, books, etc. If one room is to serve for recitation and rest, movable chairs with attached desks are recommended. They give wide possibilities of arrangement of floor space, can be chosen with reference to the size of the occupant, and otherwise conform to the usual requirements of school hygiene. Movable blackboards give the extra room for board work sometimes heeded when the wall space is largely taken up with windows.

The personal equipment and the articles needed for dining room and kitchen have been frequently provided by some private agency, but there is a distinct tendency on the part of boards of education to recognize their obligation in this regard. Since practically all articles remain the property of the school and never become the possession of the individual child, there seems to be no good reason, except that of expense, why other cities should not follow the example of Cleveland, Buffalo, Cincinnati, Rochester, New York City, and others in paying for all facilities that are necessary to insure to these children reasonable opportunities for preserving health and acquiring that modicum of knowledge which our conception of public education demands as the prerogative of each child.

## Chapter III.

### SOCIAL AND ECONOMIC CONDITIONS OF OPEN-AIR SCHOOL CHILDREN.

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An effort has been made to secure as careful information as possible on the physical, social, and economic condition of the pupils who attend open-air schools in the United States.<sup>1</sup> For this purpose a questionnaire was prepared and sent by the Bureau of Education to a number of open-air schools. The securing of answers to these questions devolved upon teachers, nurses, and physicians whose time was already more than filled. Many of the points called for were not covered in any existing record forms and, as a consequence, it was necessary to make original investigations and to seek information from new sources. This often involved visits to the home, to charitable organizations, conferences with parents, interviews with family physicians and other interested people.

The points covered in the questionnaire concerning open-air school children were as follows:

1. Total number in household?
2. How many in household have tuberculosis?
3. What relation are they to the child?
4. Is any other exposure to tuberculosis known?
5. Estimate of income per month for family during six months immediately preceding admission of child to open-air school?
6. How much rent is paid per month?
7. Number of rooms occupied by household?
8. How many of these rooms are used as sleeping rooms?
9. Does the family occupy a detached house? A tenement?
10. Have they a private yard? A vegetable garden?
11. Is general intelligence of family held high? Medium? Low?

#### *At time of admission.*

#### *At end of school year.*

- |                                   |                               |
|-----------------------------------|-------------------------------|
| 12. Cleanliness, good? Fair? Bad? | Cleanliness, good? Fair? Bad? |
| 13. Ventilation, good? Fair? Bad? | Ventilation, good? Fair? Bad? |
| 14. Overcrowded?                  | Overcrowded?                  |
| 15. Irregular meals?              | Irregular meals?              |
| 16. Alcoholism?                   | Alcoholism?                   |
| 17. Hour of retiring of child?    | Hour of retiring of child?    |
| 18. Does child occupy bed alone?  | Does child occupy bed alone?  |
| 19. Room alone?                   | Room alone?                   |
| 20. How many windows in bedroom?  | How many windows in bedroom?  |
| 21. Are windows open at night?    | Are windows open at night?    |

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<sup>1</sup> Special considerations have made the gatherings of accurate data difficult. Both doctors and teachers have had all they could do to give the proper physical and educational care to the children, and records when made came as added duties. These and other difficulties were encountered in getting information about pupils in open-air schools. When it came to matters of comparison of gains in weights, school attendance, and school progress, it has generally been impossible to get reliable information from regular school records.

Replies were received from the following cities for the schools and number of children indicated:

	Pupils.		Pupils.
Boston Mass.:		Louisville, Ky.: Audubon	
Geo. J. Angell School-----7-	7	School-----	15
L. Crocker School-----	16	Minneapolis, Minn.:	
Lafayette School-----	8	Geo. Bancroft School-----	25
Washington School-----	5	Peabody School-----	29
Winchell School-----	10	Montclair (N. J.) School-----	14
Chicago, Ill.:		Newark, N. J.:	
Burr School-----	34	Elizabeth Avenue School---	15
Foster School-----	33	Montgomery School-----	15
Franklin School-----	118	Morton Avenue School-----	15
Graham School-----	117	New York, N. Y.:	
Haines School-----	27	Class Public School No. 12--	20
Hamline School-----	37	Class Public School No. 21--	19
Holden School-----	38	Class Public School No. 33--	41
Moseley School-----	41	Oakland, Cal.: Hawthorne School	24
Open-air Schools Nos. 1		Pittsburgh, Pa.: Irene Kauf-	
and 2-----	65	man School-----	18
Open-air School No. 3-----	28	Providence (R. I.) School-----	25
Seward School-----	34	Rochester (N. Y.) School-----	26
Sheridan (Phil) School----	35	St. Louis (Mo.) School-----	45
Thorpe (Ole A.) School----	36	Schenectady, N. Y.:	
Cincinnati, Ohio:		McKinley School-----	15
Dyer School-----	26	Washington Irving School--	15
Gullford School-----	24	Springfield (Mass.) School----	25
Cleveland, Ohio:			
Eagle School-----	97	Total (16 cities, 40	
Murray Hill School-----	26	schools)-----	1,263

In many instances it was impossible for those who gathered the information to get full and complete answers, and it is therefore equally impossible to give detailed information on all the points concerned and for all of the children returned. These data have been carefully studied and tabulated by a trained social worker. Not only have the returns to the questionnaire been studied and classified, but subsequent correspondence has been necessary to verify certain points and to get fuller information where answers were incomplete or equivocal.

The first item in the questionnaire calls for the number in the households of the pupils in open-air schools. This question was answered for the families of 587 children in cities outside of Chicago and for 488 families of children in Chicago open-air schools. The average number in the families of these two groups is 6.12 and 6.2, respectively. These are unusually large averages. It should be borne in mind, however, that the open-air schools, especially in the United States, concern themselves with undernourished, physically debilitated children. The size of the family is at least one of the factors in the problem of insufficient food.

The number of rooms occupied by these families and the character of the dwelling occupied are matters of special interest in the light of the foregoing statement. The average number of rooms per family for the whole group was 4+. The prevailing type of house in the congested quarters of Chicago is the four-room flat. Many of these flats contain two rooms of fairly good size and two smaller rooms, just large enough for a double bed, but sometimes only large enough for a three-quarter bed. The family is usually restricted to the kitchen and possibly one other room during the day, and to the two bedrooms at night.

FIG. 40.—A one-room apartment. In this home the mother worked in a factory, and the older girl was kept from school to care for other children.

One room must, of course, be used as a kitchen; another may be the living room, but this usually also serves as a sleeping room. The proportion of the living quarters used for sleeping purposes ranged from 45 per cent to 79 per cent. About 14 per cent of the families live in one, two, or three room homes. As a rule the incomes in these families are the lowest of the group studied; as a rule, also, the families were large and in many of the homes conditions were such that good school work could not reasonably be expected from the children. In the majority of the homes each bedroom was occupied by more than two persons. This meant for some families four or five people in one sleeping room. In this connection it should be re-



membered that there was an average of more than one tuberculous member for each family studied.

Twenty-eight of the families studied, or 7 per cent, were living on their own property. In some of these cases, however, the house was mortgaged, and in their efforts to meet financial obligations the family itself lived in two or three rooms in order that they might rent the balance of the building and thus increase their meager income. Some of the worst conditions of overcrowding were found in these homes.

The average rent for all the families studied is \$12.34 per month. This item varies not only as between different cities, but in different parts of the same city. For instance, the average amount paid per room per month in one district of Chicago by the families having children in open-air schools is \$4; in another \$1.97. In New York City it was, respectively, \$4.57 and \$4.16 per room per month for two different schools; in Pittsburgh, \$4.25, and in Providence, R. I., \$1.90.

The question regarding the character of the dwelling was answered for 375 families and shows that 73 per cent lived in tenements and 27 per cent in detached houses. A detached house does not mean, in this study, a separate dwelling for one family, but might contain two or three apartments. It simply means that the building was separated from other buildings by some width of air space.

One question asked was whether the family had or had not a private yard and vegetable garden. There were practically no answers to the question from the schools outside of Chicago. It was answered by comparatively few of the Chicago families, and when answered was in the affirmative. These replies show that 60 families had a yard. It should be recalled that 73 per cent of the families of Chicago children covered in this study lived in tenements, and the yard was used in common by two or more families, and was principally as a space in which to dry clothes.

The tenement districts of modern cities mark the final retreat of the children from a life in the open. Mrs. Albion Fellows Bacon, in her book "Beauty for Ashes," speaks of "the essential unrighteousness of the 25-foot lot." Tenement houses in congested quarters of large cities usually rob the child of both the front and back yard. There are often two and sometimes three tenements on one of these 25-foot lots. When this is the case the essential unrighteousness is usually discernible in the children who live in such tenements.

Nineteen of the families were indicated as having gardens. A garden meant, however, a vegetable or flower garden, and any little plat along the fence was called a garden. Any return of vegetables from such gardens would be comprehended in a few radishes, onions, beans, lettuce, and possibly peas. In no case were the gardens appreciable factors as a source of food supply. They were unques-

tionably of value, however, in the life of the family, for, no matter how small or insignificant, they gave diversion and a profitable use of time to fathers and mothers as well as children.

Window boxes, kegs, and other receptacles, where struggling plants and sometimes vegetables grew, were evidences of the tenacity with which people hold to the desire to grow things from the ground. When the yard and the garden with their tasks and chores and pets, and chance for initiative in work and play and for the development of responsibility were cut away, and when the home shrank from the ranch, the farm, an individual house on a lot with its own garden and yard, to the three or four rooms on one floor level of a tene-

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FIG. 41.—The kind of home that produces malnourished children.

ment house, and when ready-made and ready-to-serve commodities were brought into the home, new conditions, problems, and responsibilities came into the schoolhouse.

The question concerning tuberculosis was answered for 598 Chicago open-air school children and from 620 open-air school children outside of Chicago.

Of 598 Chicago open-air school children,

450, i. e., 75 per cent, were diagnosed as tuberculous (lungs, glands, bones, etc.).

136, i. e., 23 per cent, were suffering from anemia and malnutrition.

12, i. e., 2 per cent, were suffering from other defects (heart troubles, etc.).

Of 620 open-air school children in different cities,

259, i. e., 42 per cent, were diagnosed as tuberculous (lungs, glands, bones, etc.).

322, i. e., 52 per cent, were suffering from anemia and malnutrition.

12, i. e., 2 per cent, were suffering from other defects (heart troubles, etc.).

27, i. e., 4 per cent, not recorded.

Those who are familiar with work of this kind know how difficult it is to get full and accurate information on this point. Families shrink from examination, often making efforts to conceal the fact that a member of their household has the disease. Moreover, it takes a minute and careful examination to discover tuberculosis in its incipient stages. Accordingly, these figures are undoubtedly below the mark. The questionnaire shows, however, that there was an average of 1.8 tuberculous persons in each of the Chicago families of open-air school children and an average of 0.8 in families outside of Chicago. In the city of Chicago the Municipal Tuberculosis Sanitarium has clinics scattered over the city and a large percentage of the children in Chicago open-air schools reach these schools through the clinics. The absence of an activity of this kind in other cities might easily account for the smaller number of tuberculous children in open-air schools.

These defects are the most prominent, but as the whole physical condition of the child receives attention, many other defects, such as diseased tonsils, adenoids, decayed teeth, and defective eyes, are discovered. Of 598 Chicago open-air school children, 188 had diseased tonsils, 165 had adenoids, 466 had decayed teeth, and 152 had defective eyes. Of 620 open-air school children in different cities, 175 had diseased tonsils, 131 had adenoids, 347 had decayed teeth, and 107 had defective eyes.

The standard of living is a topic which has been much discussed in the literature of social and economic writers in recent years. The question of a living wage has been made the sole topic or has had an important place in many sociological and charitable conferences, and it is receiving more and more attention by all charitable organizations and associations whose work has to do with industrial or social conditions. In his book *Principles of Relief* (pp. 34-36), Dr. Edward T. Devine gives \$600 a year as the amount on which at that time (1904) a family, consisting of man, wife, and three children, could live in New York City and maintain a minimum standard of health and efficiency.

In 1909 R. C. Chapin published a book on "The Standard of Living among Workingmen's Families in New York City." This was based on an extensive study of 391 budgets and working conditions in the year 1907. He placed the minimum income on which efficiency could be maintained at \$900 to \$1,000 (pp. 245-250). Since 1907 the

articles consumed in laborers' families have risen in cost about 21 per cent.

In its annual report for 1912-13 the New York Association for Improving the Condition of the Poor (pp. 45-50) gives data on the budgets of families cared for in its Home Hospital. This study places the minimum income on which health and efficiency may be maintained at from \$1,000 to \$1,150 for the Borough of Manhattan.

One of the most definite budget studies so far undertaken was made in the years 1913 and 1914 by the funds to parents department of the Cook County (Ill.) juvenile court. This is the department which administers the mothers' pension work for Chicago and Cook County. The aim is to keep dependent children in their own homes, provided the mothers are fit persons, in other respects than financial ability, to have the care and custody of their children. The purpose of this work is not merely to keep people from starving for a given period, but to give such care to the family as may reasonably be expected to make efficient citizens of the children. A trained dietitian is in charge of this work, and a detailed study has been made of more than 1,000 family budgets. Actual items of expense were carefully tabulated, and the conclusions arrived at were based on purchases and needs of families dealt with in the courts. The conclusion reached by this study was that, in Chicago in 1913-14, an income of \$75 per month was necessary to maintain a family of five or six in a state of physical and moral efficiency.

It is not the purpose of this chapter to establish what a minimum standard of income should be, or to argue the merits of the conclusions reached by any of the authorities quoted. The purpose is simply to give the results of studies made as a background for the discussion of the social and economic conditions of children in open-air schools. Military authorities agree that men can not succeed as soldiers without being properly fed and nourished. They also find that it is almost as important to be well shod. The country is beginning to question whether its school children can do the work expected of them on anything short of like conditions.

It is realized, of course, that \$75 in the hands of one family may accomplish very different results from the same amount in the hands of another family. But a certain amount of food, clothing, and shelter is necessary for everybody; furthermore, as human beings are constituted, every family, sooner or later, has its share of sickness and other unexpected misfortunes, and no income is complete that does not make some provision for medical and dental service, for sick time, rest, and recuperation. The families studied by the Cook County juvenile court were all city families, and the other studies also related to families living in crowded city districts. It is to be understood, therefore, that under such conditions there is

no subsidiary contribution to the family's maintenance in the way of a garden, milk from the family cow, or eggs or meat from a poultry yard. Everybody probably knows families living on smaller sums of money than \$75 a month, but conditions differ.

It is to be remembered also that, in the studies referred to, the whole needs of the family are considered. The sums mentioned as minimum incomes mean that the family should take care of its necessities and that the earnings should not be supplemented by hospital or dispensary care, charitable relief of one kind or another when the misfortunes come. The amount given by the juvenile court through the "Funds to Parents Act" is to relieve the families from the necessity of receiving aid from any other source.

The budget studies by the juvenile court of Chicago show the distribution of the \$75 per month about as follows:

1. Rent .....	\$12. 00
2. Food.....	29. 00
3. Fuel, light, and ice.....	5. 00
4. Household expenses .....	1. 00
5. Clothing and personal expenses.....	13. 00
6. Car fare.....	2. 50
7. Insurance .....	2. 00
8. Furniture .....	2. 50
9. Education .....	1. 00
10. Care of health (including dentist).....	4. 00
11. Recreation.....	2. 00
12. Emergencies .....	1. 00
	<hr/>
	75. 00

As a working basis for relief work the juvenile court treats the item of rent separately, because it varies in different families and in different parts of the city, and because sometimes families own the house in which they live. Since the average rent is about \$12, an allowance of that amount is made in the budget. The remaining \$63 is divided by five, the usual number in the family. This makes \$12.60 per individual per month, and this is the basis on which budgets for families are calculated. Where there are six or more people in the family, the allotment is slightly reduced; where there are less than five, the individual per capita is increased. It is understood too, of course, that the needs of small children are less than those of adults or of children who are working. However, in these families ages average fairly evenly, and the sum mentioned (\$12.60) is reckoned as necessary to maintain health, strength, and efficiency.

Accepting this standard, therefore, for the purpose of comparison, and understanding that each one who reads this will reserve the right to establish his own standard, the adequacy of incomes of open-air school children covered in the questionnaire is as follows:

The income was inadequate—

In 329 of 371 Chicago families, or 88.7 per cent; the average income being \$5.97 per individual.

In 335 of 398 families outside of Chicago, or 84 per cent; the average income being \$6.41 per individual.

The income was adequate—

In 37 of 371 Chicago families, or 13 per cent; the average income being \$15.70 per individual.

In 63 of 398 families outside of Chicago, or 16 per cent; the average income being \$18.83 per individual.

The figures show that the families having an adequate income are comparatively small. Their average membership is 5.2, compared with 6.4 in the group of families having an inadequate income. Practically all the families in Chicago below the adequate income basis are on the books of from one to five agencies which give material, medical, nursing, or other relief.<sup>1</sup>

The returns on the question of alcoholism were so indefinite and incomplete that it is impossible to give any definite figures. Alcoholism is clearly a factor in some of these families, but there was no medical diagnosis or other study aimed definitely at this problem. Obviously it would be impossible to give any accurate information on this question without such study and observation.

In the Chicago open-air schools, where the services of a municipal sanitarium nurse were available, an improvement of home conditions in families of alcoholists resulted from the definite work of the nurse. In some instances measures were instituted to curb the ability to get liquor; in other instances treatment in some institution was secured. Aside from the physical effects of alcohol, the cost of drink is especially serious in homes from which open-air school children come.

When the open-air school work was begun in Chicago it was believed by many friends of the movement that three or four months in an open-air school would be sufficient to establish a child's health. With favorable home conditions, and where the child has no very serious troubles, this may be true. The experience of the Chicago schools is that a much longer period is desirable for the majority of children. Where it has been possible to keep the child over a considerable period, it has been found that improvement is much more marked in the second year than in the first, and in the third than in the second. Many of the children in open-air schools should, in our opinion, have an opportunity to spend their whole school course in open-air schools.

Facts set forth in this chapter give some of the reasons why this is true. Many of the children in the open-air schools have had several years of adverse conditions before entering school at all.

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<sup>1</sup> This study of incomes covered the first half of the year 1913, when industrial conditions were normal in the United States.

They are under height, under weight, under nourished; they have more than their share of defects; a large percentage of them are tuberculous.

The infant welfare movement that has done such notable work in many of the large cities of the United States has thrown a strong light on this subject. The work began in the care of sick babies. It was found, however, that even in babyhood it is often too late to begin after the baby has once become ill. The great feature about the infant welfare work now is to discover the baby and care for him before he is ill at all.

The open-air school has helped to reveal the unfavorable conditions of certain children in the public schools. It has gathered these children together in small classes, and through medical work, proper feeding, and rest it has demonstrated that nearly all of them will respond and thrive under such treatment, and that it is profitable to put forth efforts in their behalf.

The friends of the movement realize, however, that bad housing conditions, inadequate incomes, ignorance, and other adverse environmental conditions can negative anything that the open-air school can do for certain of these children. The final salvation of these children involves not only child care, but a readjustment of the child's whole environment.



## Chapter IV.

### LUNCHESES—THEIR CHARACTER AND COST.

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Most of the children who have been admitted to the public open-air schools in American cities give evidence of habitual undernourishment. In 1913-14 the total number of pounds under weight for 210 Chicago children on admission to open-air schools was 1,820.07, an average of 8.66 pounds per child. Only 24 out of 210 pupils weighed what the average child of the same age, height, and sex should weigh.

Such clinical symptoms of malnutrition as undersize, pallor, loose and flabby skin, bad breath, bad condition of mucous membrane about eyes and mouth, are usually present. The children are easily exhausted physically and prove quite incapable of prolonged mental exertion. The body does not develop energy enough to stimulate and sustain the nervous system properly.

Lack of adequate and properly prepared food and failure to assimilate are the chief causes of malnutrition. The income of the families of open-air school children in 14 cities, as revealed in Chapter III, is clearly inadequate to cover the barest necessities of decent living.<sup>1</sup> Society pays the penalty for this social maladjustment in damaged children. No mother, however competent, can purchase milk and eggs and fruit on a bread-and-coffee income. Few women are trained in a knowledge of food values, and those who might, by wise marketing, double the nourishment they give their children, have never been taught how to buy.

A child can not assimilate food properly when such conditions as hurried and irregular meals and nervous exhaustion due to insufficient sleep or irritation by vermin hinder the digestive processes. All these elements enter again and again into the life stories of the children who come to the open-air schools.

Malnutrition is so prevalent among these children that out of 54 American cities listed maintaining open-air schools for physically subnormal children there are only two that do not find it necessary to make some kind of provision for serving food at school. These

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<sup>1</sup> See tables on p. 52.

are Denver, Colo., and Oakland, Cal. In both cases the fresh-air rooms are located in the good residence portion of the city, where the children's poor physical condition can not be attributed to lack of sufficient nourishment at home.

Few of the American open-air schools except those at sanatoria and hospitals give more than three regular lunches a day, and most of them find two enough. These comprise ordinarily a breakfast of cereal and milk, bread and butter, and cocoa or some hot drink, and a noon dinner which includes soup and a meat course with vegetables

FIG. 42.—The airy dining room of the Charlottenburg Open-air School.

or a meat course and dessert. The plan everywhere is to give the highest possible caloric value consistent with simple and inexpensive meals.

It is estimated that the daily ration of a child of 10 years, weighing 60 pounds, should yield about 1,600 calories and be composed approximately of 60 grams of protein, 40 grams of fats, and 250 grams of carbohydrates. The following table is based upon the estimates of acknowledged experts in school dietaries of Switzerland, Germany, and England, respectively:

*Daily food needs of the average child, aged 10 years, weight 27 to 28 kilos.<sup>1</sup>*

	Tonsig.	Erismann.	Crowley.	Average of 15 experts.
Fat.....grams	23	41	57	40
Protein.....grams	48	60	68	60
Carbohydrates.....grams	282	225	288	250
Calories.....	1,531	1,540	1,937	1,600
Calories per kilo.....	56	55	72	58
Protein per kilo.....grams	1.7	2.1	2.4	2

<sup>1</sup> Table reproduced by permission from *School Feeding*, Louise Stevens Bryant. J. B. Lippincott & Co., 913, p. 243.

This estimate can easily be made to fit an older or younger child by serving larger or smaller portions of food.

FIG. 43.—Dining room at Uffculme Open-air School, Birmingham, England

Since the meals given at the open-air school are planned only to supplement the food given at home, and not to take its place, it is necessary to know approximately what the actual food value of each child's home ration is. In the Elizabeth McCormick Open-Air Schools in Chicago a definite effort was made to study these home meals. Each child was asked to write down when he came to school in the morning what he had had for supper the night before and what his breakfast had been. Dinners were provided by the school. The nurse who visited the home went over the records with the physician and was thus able to correct any obviously improbable statements. The reports gave a monotonous list of bread with tea

or coffee for breakfast, and suppers composed mainly of cheap bakery goods and fried meats. The diet of the poor is particularly deficient in protein and fat, since the food articles that provide these elements, such as milk, eggs, butter, and meat, are apt to be expensive. Home breakfasts in particular are rarely planned to meet the needs of growing children.

On the basis of such reports as these the physician in charge estimated that the children in this school, who were largely Italian, received about 450 calories at home. It is safe to conclude that the pupils of the class who have thus far attended the public open-air

FIG 44.—Kitchen of open-air school, Rochester. The girls of the school do most of the cooking, under the direction of a domestic science teacher.

schools for physically subnormal children probably receive less than 600 calories in their home breakfasts and suppers. In order merely to bring their food supply up to normal, at least 1,000 calories should be supplied during the day by the open-air school. Furthermore, the pupils are exposed during certain months of the year to extreme cold, and even normal children under such conditions need an increased supply of food to make up for the calories transformed into body heat and given off. The private open-air schools recognize this fact when they serve hot lunches during the winter to their well pupils from excellent homes.

Students of school feeding agree that the school meal, if it is a midday dinner, shall supply at least one-half of the daily requirements in heat units and more than half of the fats and proteins.

At Rochester, N. Y., the daily menus are carefully worked out in the following way:

FIG. 45.—Dining room of Edward Mott Moore Open-air School, Rochester, N. Y.

#### MENU.

Breakfast—Oatmeal with sugar and cream. A glass of milk.

Lunch at 11 o'clock—A glass of milk.

Dinner—Pot roast of beef. Mashed potatoes. Corn. Bread and butter. Milk.

Baked apples with cream.

Afternoon lunch—Cocoa and bread.

#### Food value of the Rochester daily menu.

##### BREAKFAST.

Food material	Amount.	Grams of—			Cost.
		Protein.	Fat.	Carbohy- drate.	
Oatmeal.....	pound	1	113.5	49.6	450.3
Milk (whole).....	quarts	6	180.0	217.2	271.2
Sugar.....	pound	1	.....	.....	453.6
Total for 30 children.....	.....	293.5	266.8	1,175.1	.505
Per capita.....	.....	9.7	8.8	39.1	.017

Food value of the Rochester daily menu—Continued.

11 O'CLOCK LUNCH.

Food material.	Amount,	Grams of—			Cost.
		Protein.	Fat.	Carbohy- drate.	
Milk for 30 children.....quarts..	5	150.0	181.0	226.0	<i>Cents.</i> 0.300
Per capita.....		5.0	6.0	7.5	.010

DINNER.

Potatoes (1 peck).....pounds..	15	121.5	6.0	999.0	0.325
Beef (rump roast).....do.....	7	437.5	641.2		1.120
Corn (canned).....cans.....	3	38.1	16.2	258.3	.300
Apples.....peck.....	1	86.4	120.0	3,597.6	.400
Brown sugar.....pound.....	1			430.0	.066
Milk (whole).....quarts.....	8	240.0	289.6	361.6	.480
Butter.....pound.....	$\frac{1}{2}$	3.4	289.1		.300
Bread.....loaves.....	4	166.8	21.6	963.2	.200
Total for 33 individuals.....		1,093.7	1,383.7	6,609.7	3.191
Per capita.....		33.1	41.9	200.3	.093

AFTERNOON LUNCH.

Milk (whole).....quarts.....	5	180.0	181.0	226.0	0.300
Cocoa.....can.....	1	26.6	32.5	42.5	.115
Sugar.....pound.....	$\frac{1}{2}$			226.8	.035
Bread.....loaves.....	2	82.1	10.8	481.6	.100
Total for 30 children.....		287.7	224.3	956.9	.550
Per capita.....		8.6	7.4	31.9	.018

TOTAL FOR THE DAY.

Per capita.....		56.4	64.1	278.8	0.14
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Summary for month of June, 1912.

Twenty school days. Average attendance, 29, including three teachers.

Total food values:

	Grams.
Proteins .....	27,203.6
Fat .....	32,547.05
Carbohydrates .....	66,931.8

Amount of food per capita per day:

	Grams.
Proteins.....	46.9
Fat.....	55.9
Carbohydrates.....	115.3
Calories.....	1,151.9

The daily per capita cost of such menus is from 14 to 15 cents. A similar diet plan is in use in Louisville and Lexington, Ky.; Springfield, Mass.; Detroit, Kalamazoo, and Ypsilanti, Mich.; St. Louis, Mo.; Montclair, Newark, and Orange, N. J.; Albany, Buffalo, Syra-

cuse, and Utica, N. Y.; Cincinnati, Cleveland, Toledo, and Columbus, Ohio; Allentown, Erie, Pittsburgh, and Williamsport, Pa.; Richmond, Va.; and Kenosha, Wis.

The menus which follow cost between 11 and 12 cents daily for each child, provided the buying is done at wholesale. The average food value is between 1,100 and 1,200 calories, and the children in the Chicago schools have made as satisfactory gains in weight on this simple diet as they did in earlier years on a three-course dinner with two lunches.

FIG. 46.—Domestic science equipment utilized for open-air school children, Auburn, N. Y.

**SAMPLE MENUS FOR A WEEK, ELIZABETH MCCORMICK OPEN-AIR SCHOOLS,  
CHICAGO.**

**MONDAY.**

**Morning lunch**—Cocoa, bread, jelly.

**Noon dinner**—Browned beef stew, boiled potatoes, mashed turnips, bread, milk, farina pudding.

**TUESDAY.**

**Morning lunch**—Milk, bread, apple butter.

**Noon dinner**—Lima baked beans, cabbage salad, apple sauce, bread, milk.

**WEDNESDAY.**

**Morning lunch**—Milk, bread, sirup.

**Noon dinner**—Beef loaf with tomato sauce, baked potatoes, chocolate pudding.



## THURSDAY.

Morning lunch—Cocoa, raisin bread.

Noon dinner—Milk, bread, vegetable soup, rice pudding.

## FRIDAY.

Morning lunch—Milk, bread, jam.

Noon dinner—Creamed salmon, mashed potatoes, bread, milk, stewed prunes.

Average number of calories per child per day, 1,100.

Average cost of food per day per child, 11 cents.

Average cost of service per day per child, 7½ cents.

Total cost of food and service per child per day in Chicago Open-Air School, 18½ cents.

There are few cities where dealers will not grant wholesale rates to an open-air school, even if the amount purchased is small. Twelve cents a day will provide for each child a pint and a half of milk, all the bread and jelly he can eat, a nourishing soup or stew and an inexpensive dessert.

It is possible to work out a great enough variety of combinations to avoid the deadly institutionalism of "bean day," "fish day," etc. Racial and religious customs must be respected in planning the menu. Many children refuse milk at first, but a quiet insistence upon a little each day, combined with the example of their fellows, soon converts them. One of the most important services the open-air school can render is the development of a real liking for wholesome, simple food on the part of these children, most of whom have never known cereals or meat soups.

Simple meals keep down the cost of service and equipment. It is quite possible to equip the cloakroom which usually adjoins an ordinary recitation room with gas stove, sink, cupboards, and kitchen tables at a cost of about \$70.<sup>1</sup> The social value of the meal is better secured by a separate dining place than by the use of desks in the recitation room for tables. The equipment need not be expensive. Plain deal tables scoured white or covered with white oilcloth or laid with paper napkins for doilies may stand in any convenient room. Good taste, as well as economy, should be considered in the purchase of dishes and silver.

The simple act of breaking bread together may bring teacher and pupils into a new and delightful relation. A wise teacher welcomes this opportunity of knowing her pupils "off guard" and gladly contributes the dignity of her presence to the common table.

The children themselves can be trained to serve the food, to wait on table and, when desirable, to wash the dishes and put the dining room in order. Unless the school receives cases of open tuberculosis, there is no need of sterilizing dishes. A hemmed square of un-

<sup>1</sup> See complete list of kitchen and dining-room equipment on p. 48.

bleached muslin, with a round opening for the head, makes a good apron for either boys or girls to wear when on kitchen duty.

In Syracuse, N. Y., and Providence, R. I., the teacher plans and helps prepare the meal. The Providence children bring a lunch from home and supplement it with one hot dish prepared at school. An assistant relieves the Syracuse teacher while she cooks the dinner. It is asking too much, however, to expect a teacher to carry such heavy work for an indefinite period of time. To teach an ungraded

FIG. 47.—An inexpensive kitchen equipment which has served Providence, R. I., since 1908. Only one hot dish is prepared at noon, however, and the children supplement this with lunches brought from home.

room of 25 pupils is a serious undertaking, and she will need all her time for her school duties.

A few cities are seizing the opportunity to make the work of their domestic-science classes more vital by turning over to them the supervision and preparation of food for the open-air school. In Cleveland and Cincinnati, where the whole expense of the fresh-air work is defrayed by the board of education, the girls in the domestic-science classes plan and prepare the diets for the anemic pupils. These classes are all in public-school buildings. Where open-air schools are provided at some distance from the other schools, the plan might not be so practicable.

At Columbus, Ohio, the young women in the domestic-science department of the Ohio State University have planned the menus and

worked out the food values of every meal served at the open-air school, which is conducted jointly by the city board of education and the antituberculosis association.

South Manchester, Conn., has utilized its school of household arts for practically all the work at the open-air school of 25 children. The department is thoroughly equipped with modern cooking utensils of all kinds and is under the charge of a capable domestic-science teacher. The school is attended by 75 girls, each one of whom receives a 2-hour lesson each week. The schedule is planned so that a girl does not repeat the same lesson period until after 15 weeks. The girls attend in classes of five, in the following manner: 8.30 to 10.30; 10.30

FIG. 48.—Girls of domestic science class preparing dinner for children of open-air school, New Britain, Conn.

to 12.30; 1.30 to 3.30. In this way 15 classes are accommodated weekly. Each group moves up one period each week, thus allowing the girls to become familiar with all branches of the work. The following program gives an excellent idea of the work done each day:

A. M.

8.00. Make cocoa.

8.10. Put mugs and napkins at place on table. Put one plate of crackers, piled evenly, in the middle of each table.

8.20. Pour cocoa into mugs. Wash kettle and cooking utensils. Put one shovel of coal on each side of the fire. Pull damper forward.

**A. M.**

- 8.30. Clear tables, wash mugs, put crackers in tin box. Fill teakettle, bring in towels—if wet, hang on kitchen rack; if dry, fold and put away.
- 9.00. Sweep diningroom floor. Sweep bathroom floor, wash and wipe the bowls. On pleasant days open all upstairs windows at top and bottom, except bathroom window.
- 9.15. Prepare vegetables and dessert for dinner.
- 10.30. Everything to be served at noon should be in its dish or kettle ready to heat at 10.30. Put kettle of water to boil for potatoes on front of stove. Cream one-half pound of butter for bread. Spread butter; put one bread plate on each table. Fill a bread pan with extra slices spread and ready to replenish bread plates during dinner. Always cut bread thin and arrange evenly, without crumbs on plate.
- 10.45. If serving baked potatoes, put them in oven at this time.
- 11.00. Anything to be baked, such as soufflé or scalloped dishes, should be in oven between 10.45 and 11.00. Put potatoes in boiling water for boiled or riced potatoes. Finish the cooking of all things to be hot for dinner. Set table. Put plates and soup bowls in warming oven.
- 11.30. Arrange dessert on individual dishes, if it is to be served cold. Any pickles, butter, cookies, etc., to be served should be put on table at this time. Cooks and waitresses have light lunch.
- 11.50. Fill mugs with milk.
- 11.55. Serve food on individual plates. Place on table.
- 12.00. Waitresses take place at left of hostess. Pass bread, always going first to the one at the head of the table. Pass other food as needed. Take plates to kitchen if more food is desired. When first course is finished and all have stopped eating, remove plates, two at a time. Serve dessert. Pass cakes, etc. During dinner the cook in kitchen replenishes plates brought out for second helping by waitress. Put kettles to soak as soon as empty.
- 12.30. Waitresses and cooks serve themselves to dinner in kitchen. Fill teakettle.
- 12.45. Clear table, scrape and pile dishes.

**P. M.**

- 1.00. Leave dishes piled in order, kettles soaking. Put soiled towels to boil every Friday.
- 1.30. Wash kettles and pans, then dishes. Prepare any vegetables or dessert that can be made for next day. Wash spice jars and shelves every Tuesday and Friday.
- 2.00. Empty all waste baskets. Sweep and dust diningroom. Clean bathroom. Wipe off tops of tooth-powder boxes; brush up tooth powder; scrub bowls with Dutch Cleanser; wash and dry; dust bathroom; sweep floor; empty towel basket and replace it. Wash out ice box every Monday. Make bread.
- 2.15. Sweep upper hall, front stair, front hall. Close upstairs windows. Wash windows when possible. Wash towels and hang straight to dry. Sweep and dust parlor.
- 2.30. Put away cooked food prepared for next day. Empty milk cans, put milk in ice box, rinse cans in cold water, wash, and put on porch.
- 3.00. Put food in fireless cooker. Sweep kitchen floor. Wash linoleum.
- 3.15. Wash inside and outside of teakettle. Set it upside down on draining board. Wash stove and black twice a week when stove has cooled.
- 3.30. Close windows downstairs. Leave everything in perfect order.

An idea of the combinations arranged may be obtained from the following menu for the week:

**Monday:** Hamburg steak, mashed potatoes, celery, bread and butter, milk, cup custard.

**Tuesday:** Roast beef, baked potatoes, creamed cauliflower, bread and butter, milk, bananas.

**Wednesday:** Roast lamb, sweet potatoes, succotash, English apple tart.

**Thursday:** Minced lamb on toast, baked potatoes, tomato sauce, canteloupe.

**Friday:** Stuffed baked bluefish, creamed potatoes, bread and butter, pudding.

A cup of milk is always included in the menu.

The instructor estimates that these dinners cost only 13 cents per capita. The children of the open-air school help to keep the cost of food low by raising many of their own fruits and vegetables in a good-sized garden plat back of the school building.

The provision of meals for one or two open-air classes can be met by a private organization or by a board of education without much difficulty. But when a city like New York or Boston faces the problem of making open-air schools available to every child who needs them, the financial end demands serious consideration. It is significant that both these cities recognize their responsibility to the child with open tuberculosis by providing for him at public expense in hospital or sanitarium schools. But the anemic or malnourished children, many of them in contact with open cases of tuberculosis at home, are estimated to form at the lowest estimate 2 per cent of the whole school population, and any plan that contemplates the care of all children of this class in a large city becomes a serious problem.

Boston has worked out a plan by which every child in an open-air class has a chance to purchase a glass of milk or a hot drink—cocoa, chocolate, broth, or chowder—at a cost not to exceed 2 cents daily. Gas or electricity is installed either in the teacher's room or an ante-room adjoining the open-air classroom. In most of the classes the luncheon is prepared by the teacher; in a few it is prepared by the school matron. The children are expected to supplement the hot dish by a luncheon brought from home, and the school nurses are instructed what articles of food are best to recommend to the parents for these lunches.

In buildings where hot luncheons are served for the open-air classes the other pupils of the school have the same privilege of purchasing the hot mid-session luncheon, but the fact that the morning session in Boston closes at 12 o'clock permits most of the children to go home for a regular midday meal.

In New York City the committee on the study and prevention of tuberculosis of the Charity Organization Society provided food.

equipment, and medical supervision for the first open-air classes. The board of education soon assumed the expense of equipment, but could not undertake to supply the food. Realizing that their funds were limited and that the number of anemic children ran into the thousands, the committee early tried to determine whether the work could be successfully carried on without food.

After three years of experiments the supervising physician, Dr. I. Ogden Woodruff, concluded that except in isolated instances poverty was not the cause of the children's subnormal condition, and that irrespective of home conditions they made substantial improvement in hemoglobin and general physical tone without the provision of

FIG. 49.—Indoor lunch for open-air school pupils, Chicago.

food at school. Accordingly, the two lunches of crackers and milk, which were previously given in the morning and afternoon, have been discontinued. The children may bring food from home if they wish. It must be remembered, however, that some heat is furnished in the New York open-air rooms and that none of the children are supposed to be actively tubercular. Dr. Woodruff does not wish, however, to be considered as advocating running open-air schools preferably without feeding, for he believes there can be no hope of improving the nutrition of poorly nourished and anemic

children by merely bringing them in contact with the fresh air. He says:

We shall always include in a group of children picked out for the fresh-air classes those who are poorly nourished, those convalescing from illness, those exposed to tuberculosis or with a family history of the disease. The nutrition of these children we wish to raise to as high a point as possible; if we can, to a point beyond the normal. If we are going to attain a proper measure of success in this respect, it is certainly necessary to include additional feeding as an integral part of the work.<sup>1</sup>

Chicago's experiments, though conducted for a short time only and with a comparatively small number of children, seem to indicate that the anemic child will lose, rather than gain, if he is put under true open-air conditions without extra food.

FIG. 50.—Lunching out of doors in the first open-air school in Hungary. The indoor dining room is only used in bad weather.

The difficulties which open-air schools have encountered in their efforts to collect money from children for their meals are due largely to the actual poverty of the families represented, and in the second place to the inability to compel the attendance at the open-air school of a child who needs the treatment but whose father refuses to pay, although able to do so.

A tubercular child who is excluded from the public school by the health regulations of State or city can be forced into the open-air school by the compulsory education law, but with a mal-nourished child, exposed to tuberculosis in the home, but not himself a menace to others, it is in most places impossible to compel the transfer to an open-air room.

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<sup>1</sup> Fifteenth Annual Report, City Superintendent of Schools, New York City. Reports on defective children, p. 55.



In the following cities the board of education already pays for the food served at the open-air schools: Hartford, New Britain, and Waterbury, Conn.; Cambridge, Chelsea, and Springfield, Mass.; Detroit, Mich.; Montclair and Newark, N. J.; Buffalo, Saranac Lake, and Utica, N. Y.; Cincinnati and Cleveland, Ohio; Pittsburgh, Pa.; Providence, R. I.; Green Bay and Kenosha, Wis.

In Illinois the law permits cities of 10,000 population or over to provide diets for the tuberculous poor.

The only State legislation in this country directly dealing with school feeding is a recently enacted law in Massachusetts which gives any city the right to provide meals for school children free or at cost, provided 5 per cent of the voters file a petition to have

FIG. 51.—Lunch in an open-air school near The Hague, Holland.

the question put on the ballot, and provided a majority at election time vote in favor of it.

The Anti-Tuberculosis Association of Springfield, Mass., circulated such a petition in 1913 and the city voted to assume the food expense of the open-air school.

European countries have long since incorporated school feeding into their general system of public education. School feeding has been made a subject of national legislation in France, Switzerland, Holland, Great Britain, and Denmark. It is national in scope, supported by the municipalities in Germany, Italy, Sweden, Norway,

Finland, Austria, and Belgium. Similar legislation is under way in Russia, Spain, and the United States.

In Germany about 250 cities have some form of school feeding. The children are expected to pay when able to do so. About one-fourth pay. At the Charlottenburg Forest School each applicant for admission must present a card filled out by his father, which states the parent's trade, income, rent, number in family, and other facts which affect his ability to pay the nominal sum charged for school care. Children whose parents' names are already on the list of public or private charitable associations are admitted to free meals without question.

The establishment of "Cantines scolaires," or school restaurants, was made obligatory in France in 1882. About 1,400 now exist. In Paris 68 per cent of the meals were given free during the year 1908-9.

In England the "Provision of Meals Act" of 1906 gave the local education authorities in England permission to install school restaurants as part of the regular school equipment. Two hundred cities have introduced the lunches. Food is furnished at cost to those able to pay and free to the others. The same system is followed in the English open-air schools.

In all these countries meal tickets are used by everyone, so that the children themselves need not know who pays and who does not. Free tickets are distributed only after a thorough investigation of the families who ask for them.

This accords with the conviction of social workers in America. The mal-nourished boy indicates something wrong with the family, and possibly with society as well. He can not be regarded simply as a detached unit reporting from the unknown at 9 o'clock every morning and disappearing into space at 4 each afternoon. Any plan of school feeding which undertakes to deal with him alone is defective.

The Philadelphia school lunch committee, which has worked for four years under the careful direction of such experts in child care as Prof. Lightner Witmer and Dr. Walter S. Cornell, believes that a school visitor who will investigate and try to rectify wrong home conditions is an essential part of any well-rounded school-lunch plan.

In the open-air schools the nurse makes this connection between home and classroom. If she adds to her general nursing information a practical knowledge of the food materials suitable for various nationalities and grades of income, her visit supplements the purpose of the school feeding in the best possible way.

There should also be a definite connection with some agency which will try to restore the family to that point of economic independence where it can provide sufficient nourishing food for the child at home and pay for such lunches as are served at the school.

Until that point can be reached, the advocates of school feeding argue that they are justified in their efforts by the necessity of protecting society from disease and physical incompetency, and by their avowed purpose to make the necessary provision of food for school children not a relief measure, but a means of education.

## Chapter V.

### HEALTH SUPERVISION.

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When the Russell Sage Foundation in 1911 tabulated the results of its study of medical inspection in 1,046 American cities, it found a "relatively chaotic" condition. "Medical inspection" might mean an examination conducted by physicians for the detection and exclusion of cases of contagious disease; it might mean tests conducted by teachers or physicians for the detection of defects of vision or hearing; or it might mean complete physical examinations conducted by physicians. Dr. Ayres found that, while 443 cities had at that time "regularly organized systems of medical inspection," 279 other cities had "some sort of medical inspection." About one-fourth of these 443 cities employed school nurses, and about 1 city in 7 had a school dentist. The physicians almost always received inadequate pay for their services and frequently gave only part of their time for the school work. One hundred and six cities had placed the administration of the medical inspection in the hands of the city health department, while 337, or nearly three-fourths, depended on the board of education for health-inspection service. Though conditions have improved very much in the past five years, these statements still remain approximately true.

In England and Germany the open-air school was first developed by the regular school authorities. In America the impetus came from outside, largely from the antituberculosis forces; and the initial health supervision of open-air schools has been for the most part financed by private agencies.

In many cities, where the medical and nursing supervision of the open-air schools has been satisfactorily inaugurated, the work has later been taken over by the regular medical staff of the board of education or the city. This is a desirable arrangement if the board of education is willing to meet squarely the proposition that open-air schools demand a highly specialized supervision, and also that the class of children who attend these schools require much more time from both physician and nurse than the average school child.

Cleveland has put one man, a recognized expert on tuberculosis, in charge of all the open-air school work of the board of education. The

medical inspectors are instructed to refer to him any tuberculous or anemic children whom they find in their routine work in the schools. He is the court of last resort for diagnosis. He has personally inspected all the children in the schools in the tenement districts and has carefully examined all who showed signs of tuberculosis infection. For the school year 1912-13 this meant 5,138 inspections, 2,549 physical examinations, and 503 reexaminations. He also planned and supervised the program of the open-air schools, which, in addition to the regular school work, included a daily shower bath, rest period, and three meals at school per day.

In Newark, N. J., the chief medical inspector of the board of education, Dr. George J. Holmes, has worked out a detailed scheme of supervision for the city's open-air school for tuberculous children and the three open-window rooms for anemic children. The essential features in his plans are as follows:

Up to date no pupil has been permitted to enroll in the open-air class unless it is evident after a medical examination that he or she suffers with pulmonary tuberculosis.

The cases are discovered by the medical inspectors in the various schools. Immediately the diagnosis is made by a medical inspector, the case is assigned to a school nurse to visit the home. It is her duty to obtain and record on a printed form a complete record of the family history, previous history of the pupil from birth, present history of pupil, and social history of family, also obtaining written consent for the examination of the pupil by the supervisor of medical inspection.

The pupil then visits the supervisor in his office, accompanied usually by one or more relatives. The supervisor at this time conducts a complete examination covering the general condition of the pupil, recording weight, per cent of hæmoglobin, height, the condition of the eyes, nose, throat, heart, lungs, etc. Should the diagnosis of pulmonary tuberculosis be confirmed by the supervisor, the Von Pirquet tuberculin test is at once conducted and the results recorded at subsequent visits. Recommendation is then made by the supervisor to the superintendent for the transfer of such pupil to the tubercular class.

This school receives a daily visit of a medical inspector whose duty it is to inspect each pupil for the presence of contagious or infectious disease; to consult with the teachers and nurse regarding any pupil in particular; to conduct a complete physical examination of each new pupil on arrival, recording his findings and making his recommendations in writing to the parents; to refer such pupils requiring treatment to the school nurse, with the request to make a home visit and cooperate in the cure of each defect or disease; to weigh each pupil weekly, recording the weight on forms supplied, investigating and recommending for treatment and special care all pupils not gaining or losing in weight or running an abnormal temperature; to recommend to the supervisor regarding the cure and arrest of the disease and the transfer of the pupils cured back to the regular school.

No pupil has been transferred back to its regular school or permitted to go off the roll definitely without the weight, height, and hæmoglobin index being recorded and a definite recommendation stating that the medical inspector finds the pupil well and the disease arrested, and not then unless his findings are corroborated by the supervisor after a careful physical examination.

The school nurse follows up the recommendation of the medical inspector in respect to each pupil, visiting all the homes, consulting with the parent or guardian with regard to the physical condition of the pupil and his needs; making observation of the home conditions with respect to the housing, especially the sleeping apartments; inquiring into the nourishment of the pupil at home and his hours of rest; and instilling in the parent an interest in what is being done for the pupil and a cooperation which, with very few exceptions, has been appreciated, with the result that teeth have been repaired, tonsils and adenoids have been removed, glasses obtained, and a variety of surgical and other medical treatments instituted with resulting benefit to the pupil. \* \* \*

To be assigned to an open-window class each pupil must be subnormal in weight or in general health. This includes pupils who are anemic, frail,

FIG. 52. Recording pulse and temperature in a Chicago school.

under weight, or convalescent from disease. Each pupil is required to submit to a complete physical examination by the medical inspector, which includes weighing, measurement, and ascertaining the per cent of hæmoglobin.

The health supervision consists of the daily visits of a medical inspector for the detection of contagious disease and general supervision of the health of the pupils; the monthly weighing of pupils and recording of same; the examination of pupils for the detection of disease and defects; the home visits of the nurse to bring about the correction of defects and diseases; and the improvement of health of pupils by urging that treatment be obtained, that home sanitation be improved, and that diet and hours of rest be properly regulated.<sup>1</sup>

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<sup>1</sup> See Proc. Fourth Internat Cong School Hygiene, Vol. II, pp. 103-119.

The frequency with which observations are made of the children's pulse and temperature varies in different cities. A rise in temperature is the most significant index of the child's physical condition and often indicates something wrong which would otherwise escape notice. Wherever possible the temperature should be taken at least once a day, preferably in the morning. The nurse should also take the weights of the children at least once a month, before and after vacations, and immediately after any prolonged absence from school. The weights should be taken stripped, and the scales should be frequently tested to insure accuracy.

Not the least important contribution which the nurses can make to the extension of open-air work is the keeping of accurate records. They are the basis for reports on all work done either by nurse or

FIG. 53.—Entrance examination. Shurtleff School, Chelsea, Mass.

physician and determine whether or not the children are making proper improvement. They are a form of health bookkeeping on which the budgets for succeeding years are based.

The physicians and nurses assigned to special duty at open-air classes are probably doing the most thorough piece of health inspection and valuable reconstructive work now carried on in the public schools. They have an unusual opportunity to set high standards of efficiency. The chance to do intensive work with a small group of children under the best attainable health conditions at school and adequate nursing supervision at home challenges every scientific mind. It is a hopeful, stimulating, and joyous task.

Wherever open-air schools have been established the results have so conclusively demonstrated the value of careful health work that



they have furnished a powerful argument for making such care available to all public-school children.

In 1913 New York City created the position of medical supervisor of open-air schools and gave the appointment to Dr. I. Ogden Woodruff, who had for three years voluntarily carried on the work as a consulting physician of the committee on prevention of tuberculosis of the New York Charity Organization Society. The duties of this position are to select from the regular schools those children who need open-air treatment and to supervise and standardize methods of management in the open-air classes which are conducted in connection with the public schools. New York City cares for its tuberculous children in day camps or sanatoria. Dr. Woodruff examines the applicants for admission to these schools, but the medical supervision is otherwise in charge of the local attending physician. Dr. Woodruff is thus responsible only for the supervision of the fresh-air rooms for anemic children and the fresh-air rooms for normal children. In a personal letter, which we print by permission, Dr. Woodruff outlines his plan of work, as follows:

The initial selection and examination of the children is made by the medical supervisor, as follows:

First. From a group of children referred by teachers, school physicians, and nurses as seeming to need special care on account of their general appearance. But very few children in my experience can be chosen from this group. Teachers are very prone to consider a child's mental ability as an index of his physical condition rather than to refer cases on their physical condition alone. Both teachers and school nurses and the average school medical inspector frequently mistake the sallow skin, particularly if accompanied with light hair, which characterizes so many of the Jewish and Italian children, for anemia. A record of malnutrition on a child's card is not always reliable, because in many instances the school inspector determines malnutrition by the comparison of the weight of a child with the average weight for that age. Thus among Italian and Jewish children a great deal of malnutrition may be suggested simply because these children are frequently somewhat shorter for their age than the American, Irish, or Scandinavian. Obviously in any such instance no true malnutrition necessarily exists.

Second. A personal inspection of the classrooms is made by the medical supervisor, who selects those children which appear to him in poorest condition. Here again certain care has to be exercised not to take too many children whose physical condition is caused by some local trouble, particularly adenoids. On account of the expression, the shape of the jaw, posture, and shape of the chest which a marked defect in breathing produces, these children appear, I believe, in many instances, to be in poorer health than they really are. It has been my experience that unless the adenoid condition can be removed, little permanent or even temporary benefit can be obtained in the open-air class.

Third. A third group of children is selected by cooperation with the association of tuberculosis clinics. At my suggestion this year the secretary of this association requested that a list of the schools attended by each child of tuberculous parents under the care of the clinics be sent in to the association.

Fourth. In addition to children who are poorly nourished and anemic, particular attention has been given to selecting children whose nervous systems seem to be distinctly unstable, both those of a highly nervous kind and those who have incipient chorea and who tend to develop it during the school year.

Children who give a history of frequent absences on account of ill health are also considered unless it is evident from examinations that these absences are due to the presence of some local physical defect.

Cases of cardiac disease have so far been admitted to these classes; but personally I am still in doubt as to the desirability of taking fairly advanced cases of heart disease into the so-called anemic classes. That these children remain in better health I think there is no doubt, but I have not yet made up my mind that it is right to admit cases so far advanced that there is little likelihood of the children reaching adult life, when such admission means the exclusion of other physically abnormal children who would be likely to reach adult life and become useful citizens.

The physical examination of these children includes examinations for the heart and lungs with the children stripped to the waist, the inspection of the throat, examination for adenoids, for carious teeth, and of the glands in the neck. The examination for adenoids consists only in noting mouth breathing, nasal obstructions, and the presence or absence of a high-arched palate. If such defect is presumably present, the child is referred to a nose and throat clinic for a more thorough examination, or an operation, if necessary. Digital examination of the nasopharynx does not seem justifiable.

The posture is noted and chest configuration, also the general condition of the child, the presumable presence or absence of anemia, condition of the hair and eyes. Anemia is now generally determined by the medical supervisor on the child's general appearance. The hæmoglobinmeters with which one can work rapidly are so inaccurate as in my opinion to be of little or no value. The more accurate ones take so much time that it is not possible to use them.

A child may be put in the class for anemics, or removed, only by the order of the medical supervisor. The parents' consent must be obtained. So far complete physical examinations have not been made at intervals during the year, but only on admission and discharge. The medical supervisor visits each class at least monthly. Heights and weights are taken monthly. No medicine is given to the anemic children. If tonics or drugs are considered necessary, the children are either referred to dispensaries or to their family physician. There is no special nurse for the anemic classes, but the board of health nurse in each school cooperates in the work.

Boston has a director of school hygiene appointed by the board of education who has taken great interest in extending the open-air and open-window room work. Dr. Harrington thus described in the 1913 report of the Boston school committee the method by which children are assigned to open-air classes:

All children assigned to the open-air classes are selected by a complete medical examination by the school physician. Each child in the public schools is examined each year by the school physician. The findings of these examinations are given to the school nurses, to whom is assigned the follow-up work necessary to remedy or cure the defects found. The anemic, the glandular, and the undersized children are specially noted by the school physicians and school nurses for assignment either to open-air classes or to fresh-air rooms in the ordinary school organization.

All children assigned to open-air classes are weighed and measured regularly four times each year. Those children not showing a gain are reexamined by the medical inspector or at the out-patient department of the Consumptives' Hospital, and are closely followed up by the school nurse. Daily temperatures

are taken of children who do not show a gain in weight and who might be classified as tuberculous. This temperature taking is done by our school nurses.

Each year the school nurses weigh and measure a specified number of children monthly. This monthly weighing and measuring was begun four years ago with the children then 5 years of age, and has been continued during succeeding years with the children 6 years old, 7 years old, and 8 years old, respectively, each year. This year we weigh and measure all children 9 years of age. The primary object of this weighing and measuring was to establish a monthly norm of gain in height and weight of children from 5 to 18 years of age, inclusive. It has served, however, to give us a line on children not gaining in weight who otherwise might have escaped detection.

All children living in families where there has been a death from tuberculosis during the preceding two years are examined at the out-patient department of the Consumptives' Hospital, and are either assigned to open-air classes or, if found tuberculous, are sent to the hospital school at Mattapan. The school committee furnishes the school equipment and the teachers for the children assigned to the hospital. These children are permanent residents in the hospital, and do not return to their homes until cured.<sup>1</sup>

In Chicago the medical inspection of the public schools is carried on by the department of health. In 1913-14 there was a total enrollment in the 273 elementary schools of the city of 332,248 children and an average attendance of 261,447. To cope with the enormous task of inspecting this army of children a medical inspector and a school nurse are assigned to field work in each of the 100 districts into which the city is divided. Physicians are paid from \$70 to \$80 a month. They each give about three hours daily to the work. They must perform vaccinations and exclude for contagious disease, and they are expected to give each child an examination for the detection of physical defects. Each man has thus, on the average, over 2,500 children in his charge.

Experience demonstrated the fact that these doctors, already overburdened with their own duties, could not take time for the detailed examinations and daily supervision required for the successful operation of the open-air schools. Accordingly, the Elizabeth McCormick Memorial Fund, a private foundation which had borne all the expense of the open-air schools other than teacher and school equipment since the establishment of the work in Chicago, volunteered to employ the physicians. In 1913-14, 13 physicians on the salary list of the McCormick Foundation did the medical work for 19 open-air schools. Three of these men were chosen from the staff of the Municipal Tuberculosis Sanitarium; the other 10 were school physicians on the staff of the department of health, already assigned to schools where open-air schools were located. The monthly reports of these men give an average for the year of 19.6 hours' work for each school month, or practically an hour a day.

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<sup>1</sup> Boston School Committee, An. Rep., 1913, pp. 55-60.

During 1913-14 six visiting nurses were assigned to open-air school duty by the dispensaries of the Municipal Tuberculosis Sanitarium and seven by the department of health. The Municipal Sanitarium nurses gave an average of two and a half hours daily to the open-air schools. The school nurses of the department of health found their own duties too heavy to enable them to spend much time in visiting the homes of the open-air pupils, and occasionally attention to the remediable physical defects was delayed, but their hearty support and cooperation never failed.

The medical staff met bimonthly with an advisory staff of representative physicians. The general conclusions they reached regard-

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FIG. 54.—On a day like this, physician and teacher need to see that children are warmly clad.

ing the class of child to be admitted to the open-air school and the best way of caring for the pupils after admission are typical of the opinions held in other cities, and perhaps give as fair an idea as can be obtained of the health standards toward which the open-air schools are tending. These conclusions are embodied in the following outline for the medical and nursing organization of open-air schools of Chicago. This outline was prepared by the supervising physician in conference with the attending physicians, the medical staff, and the director of the Elizabeth McCormick Memorial Fund,

the superintendent of schools, and the president of the Chicago Municipal Sanitarium.

#### REQUISITES OF MEDICAL NURSING SERVICE.

Original medical examinations require about 30 minutes. Preliminary to such examinations the nurse should visit the home; secure, on form provided by the school, written consent of parent for examination of child and admission to school; should acquaint herself with sleeping arrangement, cleanliness of home, health of other members of the family, and arrange, if possible, to have one of the parents present at the medical examination. For accurate diagnosis the child should be stripped to the waist.

#### FIG. 55.—Personal hygiene, Chicago Open-air School.

There should be a reexamination at the end of the first term or the beginning of the second, at the end of the year, or when the child leaves the open-air school, and at other times if conditions warrant. Findings should be carefully recorded.

At all examinations a parent, nurse, teacher, or matron must be present.

Duties of attending physicians in open-window rooms: Visits should be made about 9.30, giving the nurse opportunity to make observations of temperature, pulse, and respiration, before his arrival.

Daily routine will be about as follows:

1. Conference with the principal regarding truancy, insubordination, requests for transfer, complaints of parents, granting of work certificates, and any condition bearing on health.

2. Conference with the nurse regarding children needing special attention on account of new symptoms.

3. Examination of emergency cases or children suspected of having infectious diseases.

4. Throat cultures should be made in diphtheria suspects if this has not already been done by the nurse, and a written notice left for the school inspector, so that other children from the same family may be inspected.

5. Daily conference with teacher with particular reference to children who seem to be lagging in their school work. Children will often begin to show incapacity for school work or irritable disposition several days before development of definite symptoms. The teacher having the children constantly under observation can be of great assistance to the attending physician in picking out children who need special medical care.

6. Physicians should daily inspect classrooms, sleeping rooms, and dining-rooms—

(a) With special reference to ventilation.

(b) With reference to temperature.

(c) With reference to odors which may suggest lack of sufficient ventilation.

7. Thermostats in open-window rooms and rest rooms should be inspected frequently to see that the maximum amount of heat is turned on, so that air currents in the rooms will insure the maximum change of air.

Too high a temperature is evidence of failure to obtain sufficient outside air, and should be regulated by opening windows at the top rather than by shutting off heat.

8. The outlet ducts should be frequently inspected to see that they are kept constantly closed. These outlet ducts, if left alone, permit bad air from other rooms to enter open-window rooms.

9. The clothing of children should be observed to see that none are too lightly or too heavily clad for the temperature. This should receive daily attention as it is often found that on mild days children have sufficient extra clothing to keep them in mild and constant perspiration.

10. Children who show frequent elevation of temperature, inability to fix attention upon studies, or unusual fatigue, should be placed on all-day rest. It will frequently be found that all-day rest a whole week will bring about sufficient improvement to render this treatment unnecessary of repetition for many weeks.

11. Children with acute colds should be kept on all-day rest and isolated from other children until completely recovered.

12. Reduction in the amount of school work should be prescribed by the physician for all children whose physical condition unfits them for the regular routine of study.

13. Observations of departure from normal are valueless unless they lead to medical treatment which will correct these conditions. The physician alone should decide just what particular modification of the usual routine should apply to a particular child.

14. The first requisite of an adequate physical examination is a complete personal history, which should be obtained by the nurse in the home and should cover all the infections and illnesses from which the child has suffered, with the dates of each. This should be followed by as much more detailed information as can be obtained regarding the family history, with particular stress upon exposure to infection. When tuberculosis is known to exist in the family it is important to discover whether the disease existed during the lifetime of the child and whether the child came in contact with anyone who may be assumed to have been an open case. Accurate observation should be made of height, and the degree of departure from the normal should be recorded.

15. Single observations of pulse, respiration, and temperature are of little value, and conclusions should not be drawn regarding these factors until a sufficient number of observations have been made.

16. In recording general appearance of the child, note pallor, fatigue, and relaxed muscular balance as indicated by the way the child stands.

17. *Teeth*.—Number of decayed teeth should be recorded.

18. *Eyes*.—In addition to defects of vision, records should be made of inflammatory conditions, and careful search made for keratitis, which will often lead to the discovery of tuberculosis. Trachoma should be promptly detected.

19. *Ears*.—Aside from defects of hearing, careful observations should be made for ear discharges, and these being discovered, very definite effort should be made for the removal of the cause, and plans for the effective carrying out of treatment.

20. *Nose*.—Nasal obstructions should be a matter not merely of record, but should be followed up continuously until the defect is corrected in a way not detrimental to the child's health.

21. *Adenoids*.—If present may cause the velum to stand away from the posterior pharyngeal wall, and the pressure of this growth behind the velum prevents the reflexes of this region which are normally present upon depression of the tongue.

22. *Tonsils*.—Enlarged tonsils should be classified according to the degree of enlargement and interference with respiration and the pressure of pus in crypts. The normal distance between tonsils is 1 to 1.2 inches.

23. *Glands*.—More definite standards should be adopted for the observation of enlarged glands and their classification as to size and number, so that different observers recording enlarged glands will mean the same thing. Any palpable glands should be recorded. Submaxil-

FIG. 56.—Weighing in a specially devised slip.  
(Chicago, Ill.)

lary glands escape notice unless head is thrown forward.

Numerous small palpable cervical glands are more suggestive of tuberculosis than a few glands of large size.

Large bronchial glands often produce a systolic murmur at the border of the sternum between the first and third rib when the head is thrown back (Smith's sign).

24. *Heart*.—The discovery of adventitious sounds in the heart should lead to repeated examination, and careful differentiation should be made between functional and organic murmurs.



25. *Lungs*.—First examination of the lungs should be sufficiently detailed to determine marked departure from the normal condition, leaving more detailed examination for subsequent and repeated observation.

26. *Sputum*.—Sputum examinations should be made as frequently as there is acute increase of cough.

27. *Blood*.—A Tallquist hæmoglobin estimation should be made at least twice a year.

Nurses should observe: First, evidence of acute infection and new symptoms as they appear; second, signs suspicious of contagious diseases (this should include observation of the hair, nose, eyes, mouth, and skin); third, throats on complaint, or changes in voice which might arouse suspicion; fourth, temperature, pulse, and respiration; fifth, suitability of clothing; sixth, cleanliness of teeth and skin; seventh, home conditions, covering all the observations on the family and social history chart, and should note on the chart changes which occur in home conditions, particularly acute illness in the family or other conditions of transitory character which have a bearing upon the present condition of the child, in order that additional rest may be prescribed for the child in the school to counteract temporary unfavorable conditions in the home and to elucidate present conditions; eighth, temperature and hygrometer readings in open-air rooms.

Teachers should observe: First, the adjustment of windows and screens; second, that no child is unduly exposed to drafts; third, that children are properly

FIG. 57.—Weighing in the regular open-air suit.  
(St. Louis, Mo.)

clad—(a) that heavy sweaters, Eskimo suits, coats, and heavy underwear are not worn in mild weather; (b) that children are sufficiently clad when weather suddenly turns cold; (c) that children are properly attended to when they have wet feet; fourth, which children have had glasses prescribed and that they wear them; fifth, which children fail to hear readily, and especially failure of hearing on part of children who usually hear well; sixth, the development of acute colds and nasal discharges; seventh, development of signs of nervousness and irritable disposition; eighth, development of listlessness and inability to concentrate; ninth, failure of interest in school work; tenth, increased interest in school work, and whether it is due to elevation of tem-

perature or to general improvement of physical condition; eleventh, evidence of chilling if children's hands are cold, for children will often suffer without complaint; twelfth, evidence of weariness in the morning, and should learn if due to late hours at home; thirteenth, cleanliness; fourteenth, personal habits of children; fifteenth, restlessness during rest period; sixteenth, extreme lassitude and inability to waken; seventeenth, evidence of falling appetite; eighteenth, that on returning from bath the hair is thoroughly dry, and observe caution not to permit the children to return to schoolroom too soon after bath.

Efficient nursing service is absolutely indispensable for carrying out this program.

"The school nurse," says Dr. Leonard P. Ayres, "supplies the motive force which makes medical inspection effective." This is particularly true in an open-air school, where parents must understand what is done and cooperate in the work to an unusual degree, if good results are to be obtained. The nurse may be asked to help the mother plan an outdoor sleeping porch; she may need to teach her that milk and cocoa are better than coffee for a child's breakfast; she must see to it that a boy goes to bed early and sleeps with his window open, instead of sitting until 10 o'clock in the foul air of a motion-picture theater; she must often show how to guard against infection through a tuberculous member of the household; and in all these instances she must be prepared to meet with unflinching tact and cheerfulness a frequent lack of comprehension which will yield only to repeated efforts and a sympathetic approach.

The duties of the nurse in an open-air school and the points which she should especially observe in her daily visits are outlined in the preceding section. In addition she should be free to visit the homes of any children who are absent from school, and, if possible, on the day on which the absence occurs, unless information on the cause of absence can be obtained from a reliable source. If a child is absent from school for trivial causes, or if frequent visits to the home do not rectify conditions, a written report of the case should be made to the physician in charge. Each child in the schools should be visited in his own home by the nurse at least once a month and oftener if the case demands.

## Chapter VI.

### RECORDS AND FORMS.

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It is the purpose of this chapter to present some detailed information touching the kind of records usually kept for open-air schools, and to make certain suggestions on records in general.

The record card should serve not only as an aid in the treatment of the individual child while he is in school, but taken together with the other records it should be so kept as to be of social value to the community. The physical examination should be thorough. All points should be accurately covered and recorded at the time the examination is made, and not trusted to memory with the expectation of entering them at some future time.

The open-air school usually has certain record cards and forms in addition to those used in regular school work. Form 1 is the physical-record card used in the open-air schools in Chicago. It is 7 by 10 inches. It is an evolution developed from forms previously used. Before its adoption it was submitted for criticism and suggestion to different schools and to many social workers. The card has given satisfaction. A commendable feature is that it makes possible a comparison of the child's condition on admission and on discharge. It is an advantage to have this in easily comparable columns.

The social-history card shown in Form 3 is kept by the nurse, and the aim is to give a picture of the child's home and environmental conditions. The difficulty to be corrected often lies in the home. The teacher and those responsible for the child's educational work can much more intelligently perform their duties toward him if they have an understanding of the conditions covered in this card.

In Chicago and in many other open-air schools it has been found desirable to have a parents' consent card. As has been said, the physical examination of open-air school children is ordinarily much more thorough and painstaking than that given through health inspection in the regular indoor schools. Moreover, there is usually an immediate need of correction of physical defects. The uniform

use of a parents' consent card makes it certain that the parent is apprised of the fact that his child needs some kind of special attention. This card should authorize the physician to make such examinations and tests as may be required to reveal the exact physical condition of the child and to determine steps necessary to cure de-

School Year 1914-15

Elizabeth McCormack Memorial Fund

Name

Address

No.

Date of first admission

School

PERSONAL HISTORY		DIAGNOSIS BY		M. D.
Date of Birth	When did patient have (date)	On Entrance, 1914-15	Date	
Birthplace of Father	Scarlet Fever	Mumps	Rheumatism	
RELATIVES	Influenza	Pneumonia	Fistula	
Other	Bronchitis	Pleurisy	Gastro-int. Dis.	
PREVIOUS TREATMENT	Whooping Cough	Typhoid	Scrofula Glands	
Saetanorism	Joint or Bone Diseases		Date	
Dispensary	Other Diseases		Referred to	
Private Physician	Operations			

PHYSICAL EXAMINATION ON ENTRANCE AND ON DISCHARGE				REMARKS
on admission 1914-15	on discharge 1914-15	on admission 1914-15	on discharge 1914-15	
Height	Adipoids	Present		
Weight		Absent		
Temperature	Tooths	Enlarged		
Pulse		Atrophied		
Respiration		Removed		
Nutrition	Glands	Not Enlarged		
Good		Seb. Mas.		
Fair		Cervical		
Bad		Axillary		
Emaciation		Inguinal		
Moderate		Thyroid		
Extreme		Brachial		
Teeth		Heart		
Good		Lungs		
Decayed		Urine		
Eyes		Sputum		
		Blood, Talcum Gases		
Ears				
Nose		Tuberculin Test		
		Van Piquet		
		Moro		

Form 1.—Face of physical history card used in open-air schools in Chicago. To be filled by examining physician.

fects, and should be signed by the parents. Forms 4 and 5 illustrate parents' consent cards used, respectively, in Chicago, Ill., and Newark, N. J.

In order to make the physical examination thorough, the child should be stripped to the waist. Figure 58 illustrates a slip that has been devised in the open-air schools of Chicago, to be used in this

connection as well as in weighing. It is the practice in the Chicago schools to have the mother or the nurse present at such examinations.

Forms 6 and 7 represent the face and reverse sides of the record card used in Cleveland, Ohio. The provision of this card for comparing the weight of a given child with the normal weight of a child of his or her age, sex, and height deserves attention.

Weighing should be carefully done. In the first place an accurate pair of scales should be secured, and they should be kept balanced. It is difficult to secure accurate weights unless the children are

FORM 2 — Reverse side of physical history card used in Chicago open-air schools.

stripped. In Chicago the slip, already referred to, is used (see figure 58). This serves the double purpose of making accuracy possible, and of meeting the sanctions of modesty. If children are weighed with their clothes on, there are numerous variables which make for inaccuracy. The weight of clothing is different in different seasons. It may also vary the same day or week, if children have been out in a storm and had their clothes wet. Sometimes children's pockets are full of jackstones and marbles and other possessions of childhood, and at other times they are empty.

In making a standard for the normal weight, one should be sure  
the standard worked out by

# THE UNIVERSITY OF CHICAGO

**WILLIAM L. HENRY - A.M.**

**SECRET**

**Admission**

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From a school history card used in Chicago open schools. The card is filled by the nurse. The reverse side is blank and provides for the nursing history. Pulse and temperature records are usually taken by the nurse. These records are taken daily in some schools, weekly in others, and on special indications of children in still others. Space for pulse and temperature readings can be allowed on the reverse side of the social history card. In many of the schools these records are kept in a book similar to a teacher's register.

tion in its study of weights of children. In Holt's standard both the weight and the height are taken with clothes and shoes on. The allowances for the weight of clothing for boys and girls, and for various ages, as set by Holt and by the Chicago Board of Education, are as follows:

*Weight of clothing given by Holt and by the Chicago Board of Education.*

[Based upon Holt's figures.]

Ages.	Boys.		Girls.	
	Holt.	Chicago Board of Education.	Holt.	Chicago Board of Education.
	Pounds.	Pounds.	Pounds.	Pounds.
5 years.....	2.8	2.4	2.8	2.1
6 years.....	2.8	2.6	2.8	2.3
7 years.....	3.3	2.9	3.5	2.5
8 years.....	3.5	3.2	3.5	2.8
9 years.....	3.5	3.5	3.5	3.0
10 years.....	5.7	3.9	4.5	3.3
11 years.....	5.7	4.2	4.5	3.7
12 years.....	5.7	4.6	4.5	4.2
13 years.....	7.4	5.1	5.6	4.7
14 years.....	7.4	5.8	5.6	5.2
15 years.....	7.4	6.4	5.6	5.5
16 years.....	9.7	7.2	8.1	5.9

FIG. 58.—Accurate weight taken regularly in open-air schools of Chicago.

Forms 8 and 9 are the face and reverse sides of the record card used in Newark, N. J. This card is 5 by 8 inches, and will record a great deal of information in a small space. One point on the



reverse side, the percentage of weight for height, is especially significant.

Syracuse, N. Y., also has a 3 by 8 card which is compact and well arranged to show the results of attendance upon the open-air school.

## DEPARTMENT OF HEALTH—CITY OF CHICAGO

### DIVISION OF CHILD HYGIENE—PARENTS' CONSENT CARD

PLEASE SIGN THIS CARD AND RETURN IT TO THE SCHOOL

To the parent of \_\_\_\_\_

Address \_\_\_\_\_ Attending \_\_\_\_\_ School \_\_\_\_\_

In the interest of the present and future welfare of school children, the Department of Health is making physical examinations of the pupils in the Public and Parochial Schools.

Please sign this card giving permission to have your child examined.

When signed, return the card to the school.

Parents can be present at the examination if they desire.

G. B. YOUNG, Commissioner of Health.

The school doctor is hereby granted permission to make an examination of the above named child.

Parent's Signature \_\_\_\_\_

Date \_\_\_\_\_

U. S. 16, 1916, 1917, 1918

Form 4. Parents' consent card used in Chicago open-air school.

Forms 12 and 13 illustrate a card used in the open-air schools in New York City.

A uniform card is probably not possible or desirable for all open-air schools because conditions vary in different places; but there are

Form 12

## BOARD OF EDUCATION

NEWARK, N. J.

### DEPARTMENT OF MEDICAL INSPECTION

1917

I, parent of \_\_\_\_\_

Living at \_\_\_\_\_

herewith request that the name of the Department of Education about such procedures of the proper care or treatment of such diseases or defects as in her judgment are necessary for the care of my child.

Signed \_\_\_\_\_

Form 13. Parents' consent card used in Newark, N. J.

1. Name of parent: \_\_\_\_\_ 2. Name of child: \_\_\_\_\_ 3. Age: \_\_\_\_\_ 4. Sex: \_\_\_\_\_ 5. Height: \_\_\_\_\_ 6. Weight: \_\_\_\_\_ 7. Defects of eyes: \_\_\_\_\_ 8. Defects of ears: \_\_\_\_\_ 9. Defects of nose: \_\_\_\_\_ 10. Defects of throat: \_\_\_\_\_ 11. Defects of teeth: \_\_\_\_\_ 12. Defects of skin: \_\_\_\_\_ 13. Defects of heart: \_\_\_\_\_ 14. Defects of lungs: \_\_\_\_\_ 15. Defects of stomach: \_\_\_\_\_ 16. Defects of intestines: \_\_\_\_\_ 17. Defects of bladder: \_\_\_\_\_ 18. Defects of rectum: \_\_\_\_\_ 19. Defects of genital organs: \_\_\_\_\_ 20. Defects of other organs: \_\_\_\_\_

family, number of rooms occupied, character of dwelling, rent, income, communicable diseases in the home.

In many schools, especially those abroad, chest expansion is recorded, and the Tallquist hemoglobin test is made. In the Charlottenburg school and other foreign schools, systems of physical

<b>OPEN AIR SCHOOL RECORD</b> DIVISION OF <b>MEDICAL INSPECTION AND PHYSICAL EDUCATION</b> CLEVELAND		M M Name _____ Address _____ Nationality _____ Color _____ Sex _____ Age _____ Grade _____ Contact _____	
Tuberculin Reaction NORMAL WEIGHT	Expectoration WEIGHT FOR HEIGHT	Temperature	PREVIOUS DISEASES
		PHYSICAL SIGNS	PHYSICAL SIGNS
		DIAGNOSIS	DIAGNOSIS
		SUBSEQUENT EXAMINATIONS	SUBSEQUENT EXAMINATIONS
		REMARKS	REMARKS
		DISPOSITION	DISPOSITION

FORM 6.—Face of record used in open-air school work in Cleveland, Ohio. An excellent feature of this card is the provision for comparing the weight of a given child with the normal weight for his or her age, sex, and height.

exercises for the correction of orthopedic defects are a part of the school program and a matter of record.

Records need to be carefully and painstakingly kept. The friends of open-air schools should in every way urge upon their constituencies the importance of including records and record keeping as a

THEY ARE THE ONLY TWO COUNTRIES IN THE WORLD AND THERE SHOULD BE SOME  
- THE - - - - - THE SCHOOL BOARD AND TO THE PUBLIC IN  
REASON OF IT.

[illegible]

## HOME INVESTIGATION

**THE** **WORLD**

Date \_\_\_\_\_  
 Time \_\_\_\_\_  
 Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_  
 State \_\_\_\_\_  
 Zip \_\_\_\_\_

## ECONOMIC CONDITIONS

L. \_\_\_\_\_  
 Date: \_\_\_\_\_

**THE ANSWER**

1. The first part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them.

2. The second part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them.

3. The third part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them.

4. The fourth part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them.

5. The fifth part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them.

**THE FAMILY**

*[The page contains several horizontal lines, some of which are crossed out with a single stroke, suggesting redactions or deletions.]*

None - ~~the~~ ~~of~~ ~~the~~ ~~and~~ ~~in~~ ~~Cleveland~~

Name		School		Feeding							
Address		Floor F B.		Grade		Date					
Date of Birth		SEX MALE FEMALE		COLOR WHITE BLACK		NATIONALITY		NATIVITY OF PARENTS		SCHOLARSHIP	
		ON ADMISSION		DATE		SUBSEQUENT ON LOSS		DATE		ON DISCHARGE ON LOSS	
		DATE		DATE		DATE		DATE		DATE	
HEIGHT											
WEIGHT											
% BELOW WEIGHT FOR HEIGHT											
CHEST MEASUREMENTS											
HAEMOGLOBIN											
		ON ADMISSION		\$				ON DISCHARGE		\$	
<p>NOTE IN THE SPACE ABOVE ANY IMPROVEMENT THAT HAS TAKEN PLACE IN THE PHYSICAL CONDITION OF THE CHILD SINCE ADMISSION.</p>											

Form 8.—Face of record card used in open-air school work, Newark, N. J.



Name													
Address		School		Class		Age		Sex		Date			
Recommended by				Reason				Diagnosis					
Past School History													
Past Physical History													
PHYSICAL EXAMINATION				ON ADMISSION				ON DISCHARGE					
Muscular Sys.				Teeth		Defect. Hearing		Date					
Lymph. Sys.				Tonsils		Def. Nasal Breathing							
Ossous Sys.				Adenoids		Mentality							
Nutrition				Vision		Von Piquet							
Chest													
ON ADMISSION		On Discharge		Gain or Loss		SUBSEQUENT EXAMINATIONS							
Height						Date	Hgt.	Wgt.	Haa.	Date	Hgt.	Wgt.	Haa.
Weight													
Haemoglobin													
(Circum													
Chest Inspira													
(Expir													

FORM 10.—Face of record card used in open-air school work, Syracuse, N. Y.



ADDRESS		FLOOR		c/o		DATE	
AGE	DATE OF BIRTH	SEX	COLOR	WHITE	BLACK	NATIONALITY	GRADE
THE HOME - No. ROOMS		Male - Female	CLEANLINESS	Good - Fair - Bad	CHARACTER	VENTILATION	Nativity of Parents
CHILD'S SLEEPING ROOM		Light - Fair - Dim	VENTILATION	Good - Fair - Bad	No. in Room	Good - Fair - Bad	No. in Bed
ACTION TAKEN							
THE FAMILY:		ADULTS	CHILDREN	BOARDERS	PARENTS ALCOHOLIC	Yes	No
ILLNESS IN - WHO?		WHAT?		ATTENDS SCHOOL?			
ACTION TAKEN							
ECONOMIC CONDITION							
RENT	MEANS		CHARITY RECEIVED				
WHO WORKS?	CAN PAY FOR FOOD -		YES - NO		HOW MUCH?		
ACTION TAKEN							

U. S. C. COM. 1917. TB. FORM 145-1-1-MORE SECOND-FRESH AIR CLASSES

FORM 12.—Face of record card used in open-air school work in New York City.



[illegible]

## Chapter VII.

### OPEN-AIR SCHOOLS IN GERMANY.

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*Founding and development.*—In the school year 1902–3 the Charlottenburg Board of Education undertook, more than it previously had undertaken, to adapt its school organization and methods of teaching to the physical needs of the children. Discussions with the school physicians resulted in an agreement that physically debilitated children needed care in special classes along lines already followed in Germany's school system for a number of years with mentally subnormal children.

In considering the particular needs of such children it seemed important both to the schoolmen and to the physicians to transfer them from the city to the pure invigorating air of the country. In the early discussions of this problem, the establishment of a school sanitarium where children might stay day and night seemed to offer the only feasible solution. Dr. Baginsky, who had devoted much of his time to the needs of physically subnormal children, had advocated such a plan for many years; finally, however, the discussions led to the idea of a school for delicate children where both educational and health needs might be provided for, and the result was the Charlottenburg Forest School.

While the discussions that developed this plan were in progress, the leaders of the movement were active in other lines. One committee was searching for a site. In their quest they turned naturally to the Grönewald, a wooded tract extending for many miles in the vicinity of Charlottenburg. An attractive site was found, and the real estate company which owned the land was easily persuaded to put a tract at the disposal of the school for a period of years.

The domestic management of the school was another problem which was receiving attention. Dr. Neufert and Dr. Bendix secured the cooperation of the Charlottenburg branch of the Vaterländische Frauenverein, a nation-wide woman's organization affiliated with the German National Red Cross. This group undertook the housekeeping and nursing service and also provided a Doecker housekeeping shack, thereby saving \$1,125 to the municipality.

In May, 1904, the detailed plan was presented to the Charlottenburg Board of Education and was accepted by unanimous vote. On

June 7, 1904, the school physicians gave their assent, and within a week the bill creating the forest school passed both houses of the municipal government, accompanied by an appropriation of \$8,000. On July 5, 1904, the representative of the royal Government at Potsdam gave his approval, and on August 1, 1904, the Charlottenburg Forest School was opened. Already the educational campaign which led to action by the different branches of the government had attracted nation-wide attention to the school.

*Site and equipment.*—This first site of the Charlottenburg Forest School was in a vast forest of pines and firs, about 8 minutes' walk

FIG. 59.—General view of the buildings and grounds of the Charlottenburg Open-air School.

from the nearest street-car station. On one side a mound of earth formed a natural boundary. The ground was covered with grass, ferns, raspberry and blackberry bushes. The air was pure, and absolute quiet gave relief to the over-wrought nerves of city children. The school building was a shack made of waterproof pasteboard and wood. It contained two classrooms, a room for the superintendent of the school, another for the teachers and the school equipment. One side of the schoolroom was almost entirely occupied by large French windows reaching from the floor to the ceiling and swinging

on hinges outward. Additional windows and transoms were provided in the opposite walls and in the roof. At the ends of the room were two wardrobe closets, one for boys and one for girls. Each child had a hook for his coat, hat, and satchel, and a shelf for his blanket, each item of the set bearing the same number. In bad weather the classroom was used as a diningroom and playroom as well. Instead of desks, the room was equipped with folding tables and chairs in order that it might be readily cleared for this purpose.

At some distance from this building was a spacious floored porch or resting shed entirely open to the south, but protected against heavy showers by overhanging eaves. On the opposite side of the grounds was the housekeeping section. The main building was the five-room shack furnished by the Vaterländische Frauenverein. It contained kitchen, nurses' room, a pantry, and two rooms for servants. The nurses' room was also used for the medical examinations. The kitchen had a small porch where much of the household work was done. In front of the housekeeping shack was a gravel-strewn space to indicate the children's diningroom. As there was no roof, this was used only in good weather. Planks were laid to keep the dampness from the children's feet. In addition to its service as a diningroom, the children often used it as a place to play, study, and recite.

The supplies of the school were kept in wooden shelters near by. A cellar dug deep in the earth furnished a satisfactory place, even in the warmest summer months, to keep milk and other perishable foods. A big dog served as the guardian of the forest school at night. His kennel was near the supply shelters. The school was supplied with water free of charge by an extension of water pipes from the municipal plant at Charlottenburg. In still another shack were the lavatories and bathrooms—both showers and tubs—and in still another, separate toilets for the boys and girls.

Gardens for the children were another feature of the grounds, each child having an individual lot. Another feature was the outdoor gymnasium. Here by means of a high inclosure the children were given an opportunity for gymnastic exercises, affording sun and air baths for the whole body. This was used alternately for the boys and the girls. The site not only afforded additional space for all these features, but there still remained large areas where the original character of the forest was preserved. Small arbors were erected here and there, affording cosy spaces where the older girls especially loved to retire with a book or needlework. The immediate grounds comprised about 8 acres.

*History.*—The school opened with an enrollment of 95 children from the Charlottenburg public schools. The number soon reached 120; it remained at this point until October 1, when some of the chil-

dren graduated and others moved away. The school was closed for the year on October 29, 1904.

The teaching staff consisted of four teachers—three men and one woman. Other women teachers gave their services afternoons to supervise and share the recreation period with the children.

The school grew in numbers from year to year, and the period spent at the forest school was lengthened until at the present time it is open all the year excepting from Christmas until Easter. During that interval the children attend a special school in the city. The

FIG 60.—Children at the Charlottenburg School resting under the trees. In rainy weather they use the resting shed shown to the back of the picture.

forest school now accommodates 260 children, and there are 9 teachers.

In 1910 the forest school was obliged to move, as the site it occupied was required for the extension of the municipal subway. In this emergency the board of education of Charlottenburg made a 10-year lease of an area nearly double the size of the original site from the Royal Prussian Department of Forests. This site is also in the Grönwald and is as easily accessible as the other.

The shacks containing the classrooms, the housekeeping department, the resting-shelters, and the open-air gymnasium were

transferred to the new grounds. The experiment had proved so satisfactory that the authorities gladly added new buildings and equipment for the plant.

*Administration.*—Even this brief narration of the establishment and development of the Charlottenburg Forest School indicates a corresponding deepening of the basic idea. Its founders realized that they were dealing with a vital problem and were not satisfied merely with having conceived the plan and provided the physical features necessary to its development. They realized that the real

FIG. 61.—At the Charlottenburg Open-air School both boys and girls have separate walled-in spaces for outdoor gymnastics.

problem was evolving methods and principles. It is difficult to trace these steps, because inner progress and growth in an organization or institution like the spiritual development of an individual can not accurately be expressed by facts or figures.

*Class of children to be admitted.*—The first problem that pressed for solution was to determine and to set forth characteristics that made a child a suitable candidate for the forest school. The forest school afforded a new resource, and both teachers and physicians studied the children with that new interest which is born when an



The time assigned to recitations amounted to 12 hours weekly for the second grade, 13 hours for the third grade, 14 hours for the fourth grade, 15 hours for the fifth, sixth, and seventh grades.

Such classes as natural science, gymnastics, and music were conducted out of doors whenever possible. During the recitations of two grades the other children rested, played, or busied themselves in various ways.

In 1912 the curriculum for the public schools in Germany was revised, and the daily program of the forest school was adapted to correspond to this revised curriculum.

The six grades represented from the beginning in the Charlottenburg Forest School had but two classrooms at their disposal; only two recitations therefore could go on at once. This made it somewhat hard to arrange the educational program for each day.

The lessons lasted half an hour; after each half hour there was a recess of 5 minutes; after each hour, a recess of 10 minutes. The children were never taught more than two hours at a time.

Program for the first year of the forest school.

		Classroom A.			Classroom B.		
Days.	Time.	Grade.	Subject (½ hour).	Subject (½ hour).	Grade.	Subject (½ hour).	Subject (½ hour).
Monday.	8.00- 8.55	8	Catechism and Bible study.	German.....	5	Catechism and Bible study.	German.
	9.05-10.00	8	Mathematics....	History.....	5	Arithmetic....	Writing.
	10.20-11.15	7	German.....	Catechism and Bible study.	3	Catechism and Bible study.	Arithmetic.
	11.25-12.20	7	Mathematics....	Geography....	3	German.....	Writing.
	3.00- 3.55	6	Catechism and Bible study.	German.....	4	Catechism and Bible study.	German.
	4.15- 5.10	6	Arithmetic.....	Writing.....	4	Arithmetic....	Writing.
	5.20- 6.15	8	Geography.....	Natural science.	5	German.....	Natural science.
Tuesday.	8.00- 8.55	6	German.....	Arithmetic....	5	.....do.....	Arithmetic.
	9.05-10.00	6	.....do.....	Geography....	5	.....do.....	Geography.
	10.20-11.15	7	.....do.....	Writing.....	4	Arithmetic....	German.
	11.25-12.20	7	.....do.....	Arithmetic....	4	German.....	History.
	3.00- 3.55	8	.....do.....	.....do.....	3	.....do.....	Arithmetic.
	4.15- 5.10	8	.....do.....	Writing.....	3	.....do.....	Local geography.
	5.20- 6.15	8 and 7	Music.....	Gymnastics...	6	Natural science.	
Wednesday.	8.00- 8.55	5	Catechism and Bible study.	German.....	5	German.....	Arithmetic.
	9.05-10.00	6	Arithmetic.....	.....do.....	5	.....do.....	Music.
	10.20-11.15	8	German.....	Arithmetic....	3	Arithmetic....	Gymnastics.
	11.25-12.20	8	History.....	German.....	3	German.....	German.
	3.00- 3.55	7	Catechism and Bible study.	Arithmetic....	4	Catechism and Bible study.	Do.
	4.15- 5.10	7	History.....	German.....	4	Arithmetic....	Do.
	5.20- 6.15	8 and 7	Gymnastics.....	.....			
Thursday.	8.00- 8.55	8	German.....	Arithmetic....	5	Catechism and Bible study.	Do.
	9.05-10.00	8	.....do.....	Writing.....	5	Arithmetic....	Writing.
	10.20-11.15	7	Arithmetic.....	German.....	3	Catechism and Bible study.	Arithmetic.
	11.25-12.20	7	German.....	Natural science.	3	German.....	German.





the public schools and to be able to reenter them on discharge from the forest school. If a child were slow in understanding, the teacher could not waste time during the period by further explanations. He would, rather, find an opportunity outside of school time for talking things over and removing the difficulties. In this regard it was a wonderful help that the intercourse between teachers and pupils was not confined to school hours. The everyday life afforded excellent opportunities for assisting backward children to conquer shortcomings.

The Charlottenburg Forest School, like nearly all the German forest schools, is based on the coeducational plan. While Germany as a rule does not favor coeducation in her schools, it is deserving of emphasis that no disadvantages whatever as a result of coeducation have been reported from the forest schools. On the other hand, beneficial effects were observed.

Says Dr. Neufert, writing of the Charlottenburg Forest School:

Many a dull and listless lad was seriously disturbed if the bright girl at his side habitually raised her hand quicker than he in response to the teacher's questions; he soon tried very earnestly to equal her. The girls, on the other hand, were impressed by the boys' deliberateness and presence of mind and answered less impetuously. The manners of the boys were decidedly improved by the presence of the girls, who as a rule were neat and well behaved.

*Medical care and supervision.*—The selection of children for the forest school is made by the regular physicians of the Charlottenburg public schools, but the physician of the forest school examines each case and admits the children. Dr. S. Bendix has been in charge during the whole period of the school's existence. Special attention is given to heart and lungs and general condition as indicated by complexion, development of the muscles, nutrition, and similar indications. The findings are entered on a specially designed schedule. The weight of the child is taken on admission and fortnightly thereafter. Since 1906, height, chest expansion, and the Tallquist blood test have been made a part of the record. Urine is examined only on special indication. This same thorough examination is given on the discharge of the children.

During their stay in the forest school the children are under a continuous medical and nursing supervision. In the early weeks of the school the doctor pays a daily visit. The same is the case the last three or four weeks of school. In the intervening time at least three visits a week are made by the physician, and oftener if there is special need.

Little medicine is given. Almost entire reliance is placed upon the efficacy of pure air, sunshine, and a wholesomely regulated life. There are many things, however, to which the physician gives strict attention. He prescribes the dietary, advises as to the clothing the

children wear, gives careful supervision of exercise and recreation, prescribes warm baths for seriously anemic and nervous children and saline baths for scrofulous children. In 1905 32 children received three saline baths a week. Each child is given two or three shower baths a week and a cleansing tub bath at least once a fortnight.

Since 1911 special attention has been given to orthopedic defects. An examination by a specialist proved that many of the forest school children suffered from slight curvatures of the spine and other malformations. In the months of August and September, 1911, an experiment was tried with 40 girls who were suffering from curvatures and other orthopedic defects. The treatment consisted chiefly of specially devised gymnastic exercises. The results were so satisfactory that his scheme of exercises is now given to all the children who have such defects.

The physician is assisted in his work by a Red Cross nurse who is responsible for carrying out his directions. She weighs and takes the height of the children and gives whatever help may be necessary in emergency cases until the physician can be called. As the nurse gives her whole time to the forest school and stays both night and day, she is able to supervise the housekeeping.

The forest school's purpose is not alone to tide the children over a certain crucial period, but also to secure if possible a lasting improvement in health. Since the children are nearly all anemic and underfed, a most important factor in attaining this purpose is food. The managers of the school reasoned that they could not depend upon the chance of the children receiving the proper kind of food at home. If the results were to be of any permanent value to the child and if the school assumed the responsibility for the results, the feeding had to be provided by the school. It was consequently decided from the beginning that the feeding furnished by the school should render the child independent of further home feeding.

The following plan of meals was instituted at the school:

- 7.45 a. m. Porridge of rice flour or rye flour, rolls and butter.
- 10.00 a. m. Milk (average 1 pt.), buttered rye bread.
- 12.30 p. m. Meat (3.2 oz.), vegetables, potatoes, legumes (6.4 oz.).
- 4.00 p. m. Milk (average 1 pt.), rye bread with jam or marmalade.
- 6.30 p. m. Porridge of oatmeal, or cocoa or pie, buttered rye bread.

Care is taken to give the greatest possible variety. Sample dinner menus will show how varied a diet was supplied despite the simplicity that prevailed:

- Macaroni and smothered beef.
- Irish stew.
- Mixed dried fruit, dumplings, and bacon.
- Carrots and pork roast.
- Porridge of barley and Frankfurts.
- Noodle soup and beef.

String beans and roast of mutton.  
Vegetable soup with boiled beef.  
Rice boiled in milk and pork sausage.  
Veal, potatoes, stewed fruit.  
Meat loaf, potatoes, prunes.  
Lentil soup with beef.  
Pea soup with pork.

Both teachers and nurse are interested in persuading the children with small appetites to eat their portion. The appetite once aroused is very seldom discouraged. Many children ask for a second or even a third helping.

Since 1906 the attempt has been made to keep the most delicate children in the forest school until Christmas, and since 1909 these children have been retained in a special class and supplied with special treatment according to the forest-school plan. The forest school is open practically all the year around. The physicians of the forest school may admit the same child year after year. It is therefore possible for a very delicate child to enjoy the benefit of the forest school nearly all his school time, or at least as long as the physician thinks necessary.

The children reach school at 7.45 a. m. Some walk, but those living at a distance use the surface car line. The street car company provides a special car running on a regular schedule. A teacher and the children from a given district gather at the most convenient stopping place and go to the school together. On arrival, a breakfast consisting of porridge, rolls and butter is eaten. At 8 o'clock sessions open for two grades and last two hours. At 10 o'clock a mid-morning lunch consisting of one or two cups of milk and buttered rye bread is served. Then sessions begin for two other grades, while the rest of the children play about the grounds or in the gymnasium or are busy with needlework or books. At 12 o'clock a bell announces dinner. The diningroom under the high fir trees is a feature which never loses its appeal to the children. It has an especial attraction on Sunday, when a dessert is added to the dinner.

A rest period of one and a half to two hours is observed daily. For this purpose camp chairs and blankets are provided. At first the children objected to the rest hour, but they learned to keep quiet and after a few weeks nearly all the children fell asleep almost as soon as they settled in their chairs. At 3 o'clock the remaining two grades have their recitations. At 4 o'clock they have their afternoon milk, with brown bread and jam or marmalade. Some grades may have one or two periods after this lunch, but most of the children are at liberty to devote the whole afternoon to play and exercise and in the latitude of Berlin the summer afternoons are long.

In November some of the children return to the city. During the latter weeks it is often necessary to use the buildings for the play

periods. Practically the same régime is carried on in the special school which the children attend in the city from Christmas to Easter.

*Results.*—The Charlottenburg Forest School undertook to improve the health of its children, and it hoped at the same time that it might succeed in keeping them from losing in school standing.

In order to discuss physical progress it is necessary to understand the class of children dealt with. The pupils in the Charlottenburg school may be divided into the following groups:

1. Anemic children, i. e., children suffering from anemia and its consequences, rapid heart, headache, nervousness, nasal hemorrhages, etc.

2. Scrofulous children, i. e., children suffering from enlarged glands and other symptoms of scrofula, for instance, eczema, inflammation of the eyelids, etc.

3. Children with organic heart disease.

4. Children with positive pulmonary difficulties.

Between August 1 and October 29, 1904, 122 children attended the forest school; 15 of these had to be discharged for one reason or another after a short time. Only 107 children stayed three months, or nearly three months, in the forest school. Their physical gains are recorded in the following way.

*Physical results of three months' stay at the school.*

	Number.	Per cent.
1. Anemic children.....	34	.....
Deteriorated.....	1	2.9
Unchanged.....	9	26.4
Improved.....	11	32.4
Cured.....	13	38.3
2. Scrofulous children.....	38	.....
Deteriorated.....	0	.....
Unchanged.....	8	21.0
Improved.....	22	57.9
Cured.....	8	21.1
3. Children with organic heart diseases.....	14	.....
Deteriorated.....	0	.....
Unchanged.....	7	50.0
Improved.....	7	50.0
Cured.....	0	.....
4. Children with positive pulmonary troubles.....	21	.....
Deteriorated.....	1	4.8
Unchanged.....	8	38.1
Improved.....	8	38.1
Cured.....	4	19.0

Of course it is not to be expected that either organic heart disease or lung troubles can be completely cured in so short a time. The children with heart troubles are recorded as improved if certain

symptoms, such as rapidity and difficulty in breathing, have decreased or disappeared. The same is true regarding the children with lung troubles. An improvement in nutrition has always been considered a most important factor.

The gains in weight are very striking; 118 children who were weighed on admission and discharge showed a total gain of 682.60 pounds, or an average gain per child of 5.78 pounds. Sixty-seven children who had been in the forest school fully three months were present on the first and last weighing day (Aug. 2 and Oct. 29). They showed a total gain of 444.35 pounds, or an average gain per child of 6.63 pounds. Eleven of these children showed a gain of from 10 to 16 pounds.

These results were attained by the plain and simple means of medical and nursing care, out-of-door life in all kinds of weather, exposure to the sun, baths, nourishing food, and a considerable shortening of recitation periods. The pupils looked like different children after the first week's stay at the forest school. Instead of being pale and listless with big, sad eyes, they had grown into youngsters with a tanned complexion, glowing cheeks, their eyes bright and eager. The usual question of visitors in these first weeks, "Is not the forest school a school for sickly children?" seemed entirely justified by the appearance of the children.

The improvement of the children's physical condition was subjected to a severe test during the rainy, damp days of the rather cold October of 1904. Although they stayed out of doors nearly all of the time, not one of them caught cold.

*Educational results.*—Data are lacking on which to base definite comparisons of school progress with the previous record of these children, but certain observations of progress and improvement while the children were in the open-air school, and also of their standing in the regular classes when they were returned to the city schools, have been made.

The difficulties to be overcome by teachers and pupils, due to previous irregular attendance of the children on account of ill health and to the fact that they were gathered from different schools and different conditions, have already been discussed. Increased eagerness and alertness on the part of the children became apparent within a short time after admission to the school. Lack of interest was complained of on the part of only 3 out of the 120 pupils. Most of the children were proficient in their studies; nearly all of them lived up to their abilities. Lack of advancement was observed in only 5 out of 120 pupils, but in some of these cases a special reason, attributable to the child's physical condition or his home environment, explained the difficulty. In 13 cases the advancement of the children in all or many of the subjects studied was considerably

improved. One child that the teachers were about to transfer to a subnormal center made such marked progress that even after having been returned to the regular school he made normal advancement.

The Charlottenburg Board of Education, however, desired to get information on the educational results in addition to the reports of the forest-school teachers. Some weeks after the children's return to the regular public schools the board asked the superintendents of three of these schools to report on the scholarship of the returned forest-school children. The statements were strongly in favor of the forest school. The greater eagerness and alertness of the children were particularly emphasized. Moreover, in the beginning of Jan-

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FIG 62.—Exterior of open-air school building, Elberfeld, Germany.

uary, 1905, official reports on the scholarship of the forest-school children were required. According to these reports, the scholarship in 108 cases had remained the same or had improved. In only 12 cases had it deteriorated.

In estimating the value of these results, it must be remembered that, owing to the limited capacity of the forest school, only the most needy, delicate, and sickly children could be admitted—children subjected to bad home conditions and some of them even to temporary illnesses. Moreover, a considerable time had elapsed between the time the children left the forest school and the time this scholarship test was made, and adverse conditions had again had their influence

on them. Their physical condition, therefore, was not the same as it had been on discharge from the forest school.

The results of this first year, therefore, show that the pedagogical purpose of the forest school—not to retard the child mentally—is attainable and had been accomplished with most of the children.

The intimacy in which the children lived with their teachers and with each other proved to be good training and helped to improve deportment. Mutual helpfulness developed, and the feeling of friendship and comradeship was strengthened. The discipline and directions necessitated by their daily life in the forest school made the

FIG. 63.—The delightful setting of the Elberfeld Open-air School is illustrated by this view of the children at rest.

children very helpful and created an esprit de corps which aided much in their management.

*Public opinion.*—Public opinion, influenced by the understanding attitude of the daily press and the pedagogical and medical periodicals, was from the beginning strongly in favor of the forest school. At first the parents of the children, however, met the new institution with a hearty distrust and could not easily be persuaded to have their children transferred to the forest school. But this distrust changed rapidly into the keenest interest. They came to visit the school from which their children returned full of life and spirits and refreshed after the days that had been sultry and oppressive in the city.



Visitors became so numerous that they had to be limited to certain hours of the day. Sunday afternoons are now set apart for visiting parents who, from distrustful opponents, have grown into the most ardent supporters of the forest school and are often very effective cooperators in the work. Besides the parents, the forest school had many other visitors. Representatives of municipal and State governments, organizations and individuals who were interested in social betterment, came not only from all parts of Germany and other European countries, but even from beyond the ocean. The forest-school children were greatly rejoiced when, on June 10, 1907, the German Empress spent a few hours with them.

The volunteer work that was heartily undertaken by some of the Charlottenburg public-school teachers has already been mentioned. Valuable help has been given by the street car company. Not only did they put special cars at the disposal of the school at certain hours, but issued tickets at a considerably reduced rate (75 cents a month) and carried 10 of the poorest children free of charge. The municipal government purchased tickets for 30 other children whose parents were too poor to pay.

*Budget.*—The forest school is entirely supported by the Charlottenburg municipal government. The expense for the establishment of the school in 1904 amounted to \$5,259.37. Since then it has been necessary to complete and enlarge the plant and to renovate parts of it. The considerable amounts required have always been voted by the Charlottenburg municipal government.

The teachers in charge of the forest school get their board free of charge, and as they are required to give the whole day and Sundays to the school a monthly addition is also made to their salary.

The food has cost from 12 to 13 cents per day per child. Parents who are financially able are expected to pay, and a special record form is used in securing data on this point. At first difficulties were met with, but the more the parents grew conscious of the benefits their children derived from the forest school, the readier they were to contribute their share. In 1904, \$250 was collected from parents.

Forest schools have been established since 1904 in the following cities:

*Cities in which forest schools have been established since 1904.<sup>1</sup>*

Name of city.	Name of school.	Date of opening.	Supported by—	Length of term.	Attendance.	Period for which children are admitted.
<b>I. PRUSSIA.</b>						
Aachen..... (Rheinprovinz).	Waldschule Aachen.	.....	Stadtgemeinde Aachen.	April to October.	120 during summer.	6 weeks.
Cassel.....	Kindererholungsstaette Cassel.	.....	Walderholungsstaetten, E. V. Cassel.	All summer.	.....	.....
Elberfeld..... (Rheinprovinz).	Waldschule "Burgholz."	July 17, 1907..	Rekonvaleszenten-Verein Elberfeld and Elberfelder Verein fuer Gemeinwohl, E. V.	April to November.	170.....	As long as physician thinks necessary.
Griesheim-Main.	Waldschule Griesheim.	Under construction summer of 1914.	Gemeinde Griesheim.	.....	.....	.....
Husum (Schleswig-Holstein).	.....	.....	.....	.....	.....	.....
Muenchen-Gladbach. (Rheinprovinz).	Waldschule Muenchen-Gladbach.	May 28, 1906..	Stadtgemeinde Muenchen-Gladbach.	All summer.	350 to 400 during summer.	2 months.
Saarbruecken (Rheinprovinz).	Waldschule Saarbruecken.	July 1, 1914...	Stadtgemeinde Saarbruecken.	...do.....	50	.....
Ziegenhals (Schlesien).	Waldschule Ziegenhals.	.....	Graeflich von Baljestrem'sche Gueter-Direktion, Ruda (Oberschlesien).	...do.....	240 to 280 during summer.	3 to 4 weeks.
<b>II. BAVARIA.</b>						
Nuremberg ....	Kinderwilderholungsheim Rueckersdorf.	July 7, 1910...	Verein zur Bekämpfung der Tuberkulose, E. V. Nuremberg.	All the year around.	About 200.	As long as physician thinks necessary.
<b>III. SAXONY.</b>						
Chemnitz (Sachsen).	Kinderwilderholungsheim Chemnitz.	.....	Verein zur Bekämpfung der Schwindsucht in Chemnitz und Umgebung, E. V.	All the year around.	.....	As long as physician thinks necessary.
<b>IV. HAMBURG.</b>						
Hamburg.....	Waldschule Bergedorf.	Under construction summer of 1914.	.....	.....	44	.....
<b>V. LUEBECK.</b>						
Luebeck.....	Waldschule Luebeck-Wesloe.	.....	.....	April to October.	.....	As long as physician thinks necessary.
<b>VI. ALSACE-LORRAINE.</b>						
Muehlhausen (Elsass).	Waldschule Muehlhausen.	May 7, 1906...	Stadtgemeinde Muehlhausen.	April to October.	.....	As long as physician thinks necessary.

<sup>1</sup> This list is doubtless not complete, since the beginning of the war made it impossible to secure further information.

*Extension of open-air schools in Germany.*—The experiences and successes of the Charlottenburg Forest School were strong incentives to other cities to make similar provisions.

In 1906, the secretary of the Royal Prussian Department of Education issued the following statement:

In the *Zentralblatt für die gesamte Unterrichtsverwaltung in Preussen*, September to October, 1905, a detailed account of the Charlottenburg Forest School is given.

In regard to the dangers that exist in large cities and in almost all industrial places for the normal physical development of children and adolescents, all institutions are to be sincerely welcomed that will help to secure a higher degree of health and strength to the young people. The more satisfactory these measures are, the more they deserve the most careful attention and the most vigorous support.

Among them the forest school, because of the peculiar connection of physical and educational purposes, commands keen interest. I therefore call the attention of those branches of the Royal Government concerned to the article above mentioned, and in compliance with a special order of His Majesty the Emperor and King, I request its widest consideration.

Further, I desire to lend whatever help is possible to all cities and country places that plan the establishment of similar institutions, and desire to be informed when any such institutions should be founded in your district.

This served to give the greatest possible publicity to the Charlottenburg experiment, at least in Prussia.

Many schools, particularly those at Muehlhausen, Muenchen-Gladbach, and Elberfeld, have closely followed the Charlottenburg plan. Fundamental dissimilarities that appear are largely attributable to the fact that scarcely any of these schools—with the exception, perhaps, of Muehlhausen, Muenchen-Gladbach, and Aachen—are as purely municipal institutions as the one at Charlottenburg. Their establishment was due either to the initiative of some social-welfare organization, for instance, in Elberfeld, to the *Rekonvaleszenten-Verein* and the *Verein für Gemeinwohl*, or to the fact that a certain amount of money has been donated or bequeathed to the municipality and dedicated to this definite purpose. Responsibility in such cases is shared by the board of trustees of such foundations. The closest cooperation, however, of the municipal government is always required because of its right to supervise the public schools.

Under certain circumstances a forest school may be an entirely private institution. It may, for instance, be established by the management of some big industrial enterprise in connection with other welfare features for the benefit of its laborers. One of these schools is the forest school in Ziegenhals, Upper Silesia, which was established, owned, and managed by the Graeflich von Ballestrem'schen Gueter-Direktion, Ruda, Upper Silesia. As a rule the period for which the children are admitted is very short in these schools (in Ziegenhals three to four weeks). These schools, therefore, may

hardly be considered as a part of the public-school system, but provide a recovery place for the children where the danger of retardation is eliminated.

Nearly all of the forest schools have one great advantage over Charlottenburg in that they are locally connected with one or more special welfare institutions.

The institutions that are above all others fitted to have a forest school attached to them are the so-called recovery places in the woods. The plan to establish these recovery places was formed in 1899 by Dr. Wolf Becher and Dr. Rudolf Lennhoff after an investigation into the housing conditions of tuberculous laborers in Berlin.

FIG. 64.—Type of reclining chair used for the rest period in the open-air school at Nuremberg, Germany.

In some stages of tuberculosis the most important advice of the physician to his patient is to spend as much time as possible, not only out of doors, but in pure and invigorating air. No one knows how long such advice has been given and received without anybody being specially concerned as to the patients' possibility or opportunity of obeying instructions.

It is the purpose of the "Recovery Places in the Woods" to furnish the laborers in the large cities with this opportunity, despite the long distances and other apparently overwhelming difficulties. The recovery places had to be equipped for a whole day's sojourn; they, therefore, had to afford a shelter when it rained, a resting place

when the patients were tired, and an opportunity to get nourishing food when they were hungry. In 1900 the first recovery place in the Jungfernheide, near Berlin, was established for men. Soon after one was started for women. A natural development led to the establishment of recovery places especially for children as early as 1902.

The first children were introduced into the recovery places by coming along with their fathers. After the establishment of recovery places for women, many more children were brought, because their mothers could not come and leave their children at home alone and uncared for. Good results were shown in the children, but their presence was a drawback to their mothers. The next step was,

FIG. 65.—Dormitory for residential pupils, open-air school at Nuremberg, Germany.

therefore, to create the same kind of provision for the care of children, apart from the quarters of the men and women.

Now there are about 90 recovery places in the woods in Germany. They are sometimes managed by the municipality, but more often by some local organization for combating tuberculosis.

The site of these recovery places is always exactly what the site of a forest school ought to be. When, therefore, the plan of establishing a forest school was conceived in a community where recovery places in the woods existed, it seemed the only natural and economical thing to connect them. Undoubtedly the problem of equipment is much easier if, for instance, the housekeeping plant can be utilized

to its full capacity; the bathing facilities can be much more complete, and drainage and plumbing much more in accordance with the requirements of modern hygiene, if adequate machinery can be afforded.

Early in the experience of these recovery places it became evident that both night and day care was needed by certain of the patients. Accordingly, some of the recovery places installed conveniences for overnight care along much the same lines as that followed in night camps in America. The original recovery places were primitive and suitable for use in summer only. In time some of them extended their work over the whole year, and this, of course, required the in-

FIG. 66.—Interior of open-air school class room, Elberfeld, Germany.

stallation of light and heat and general provision for the hardships of winter weather.

Nearly all the recovery places are now under medical supervision. A physician is duly appointed, who has his office on the grounds. His duties are to examine and advise the patients. In the early days of the children's recovery places it was difficult to get the consent of the parents to leave the children in the recovery places as long as the doctors thought necessary. The fathers and mothers feared retardation at school. To meet this objection the recovery places introduced the idea of educational work. In this they had the example already set in the forest schools. This feature spread rapidly through most of the recovery places in Germany.

The fact that these recovery places were established with the sole purpose of improving the children's health keeps the emphasis entirely on the physical side. In most places the educational work does not pretend to take the place of school. Its main object is to keep the children from forgetting what they have already learned, and to keep alive and active the habit of study. For this purpose many children's recovery places, for example, that at Chemnitz, have introduced one hour's daily school time for all the children of school age who are not put on full rest by the physician. Some of the recovery places have kindergartners as teachers. Some, however, have developed the educational side to a degree that is very nearly equal to that at the forest school.

The Rueckersdorf children's recovery place, owned and managed by the Nuremberg organization for fighting tuberculosis, is typical. It was established in 1910. It has stood strongly for the principle that the length of stay ought to depend entirely on the child's physical condition, and that a long stay securing a lasting benefit is of far greater value in the fight against tuberculosis than merely temporary improvement. In this case, therefore, the educational problem has had attention from the beginning. In 1911 the recovery place was open all summer and educational work closely akin to the Forest School plan was provided for the children. Each child is expected to get one hour and a half of schooling a day, besides one hour devoted to physical culture and gymnastics.

The children's recovery places—though usually not managed by the municipal governments—found as a rule their readiest public support when they planned to develop a forest school. The teachers and the equipment of the schoolroom are mainly furnished by the municipal government, through its board of education. The regular supervision of the educational work to which the whole public school system is subject is also vested in the school board.

Some forest schools in Germany admit children under about the same conditions as described for Charlottenburg. Muehlhausen makes the probability or even the certainty with which permanent benefit can be predicted for the child a determining point in his selection. Despite this fact the children first admitted to the Muehlhausen Forest School seem to have been in worse condition than the Charlottenburg forest school children. Muehlhausen had, in consequence, more serious initial troubles with the adaptation of children to the unaccustomed conditions than Charlottenburg. Perhaps another circumstance may have proved disadvantageous in this regard. The Muehlhausen Forest School is situated on a hill, and the children, after a ride on the surface lines, have a steep hill to climb to reach the school. Fortunately the municipality could keep over night the children that suffered most from the exertion. A

Home for Convalescent Children occupied the second floor of the old manor, the first floor, basement, and grounds of which furnish quarters for the forest school.

The children's recovery places are always in closest touch with all the other organizations and institutions whose object is to combat tuberculosis, particularly with the so-called information and aid stations for tuberculous people. These organizations are comparable to tuberculosis dispensaries common in the United States. These stations select the children for the recovery-places in the woods and therefore for the forest schools connected with them. Without disregarding anemia and malnutrition, they consider first the exposure of the child to tuberculosis and his predisposition to possible infection. Cases of open tuberculosis are excluded in all these schools.

FIG. 67.—An open-air recitation at München-Gladbach, Germany.

Applications for admission always greatly exceed the capacity of the recovery places. These children are selected who are most exposed to the danger of tuberculosis infection and belong to the most needy families. The Rueckersdorf recovery place, for instance, formulates the conditions as follows:

1. Anemic, undernourished debilitated children.
2. Children exposed to tuberculous infection, or predisposed to tuberculosis.
3. Children with incipient or suspected tuberculosis.
4. Scrofulous children (suffering from tubercular glands).
5. Tuberculous children (closed cases).
6. Children with chronic bronchitis.

The school life of the children is guided everywhere by the same principles. Some forest schools, especially those in the recovery



places, make a stronger point than Charlottenburg of having all the recitations out-of-doors. Only in case of absolute necessity do their children retire into a more or less improvised classroom. After each recitation some of the recovery places have an intermission of the same length, instead of the 5 or 10 minutes' recess as in Charlottenburg.

The medical treatment is much the same as at Charlottenburg. Everywhere emphasis is laid upon strictly hygienic measures. The feeding also closely follows the Charlottenburg plan. In Muenchen-Gladbach the dinner is more elaborate than in the other forest schools, but the children are supposed to get their breakfast at home. The Muehlhausen school started with five meals a day, but after some time decided to omit the 4 o'clock milk or cocoa and to make the

FIG. 08.— Open air shack used for rest hour at Muenchen-Gladbach, Germany.

supper a little more ample. The forest schools at Muehlhausen, Elberfeld, and Nuremberg decided from the beginning to provide accommodations for both day and night care for some of the most delicate children.

In 1913 Nuremberg made the attempt to keep the Rueckersdorf recovery place open during the winter. Definite data as to the results are not available, but the report for 1913, covering the first two months of the winter school, states that, judging by the short experience, the experiment seemed very promising.

The connection of the forest schools with the children's recovery places afforded the first opportunity to German children of having a forest school all the year round and to be taken care of in the most effective way.

The success of the forest schools is entirely satisfactory everywhere. All reports state that the percentage of forest-school children who are not able to keep up with their grade when returned to the regular school or who fail to make one grade in a year is no larger than that among the regular school children. The greater alertness of the children after their return from the forest school is frequently noted.

The improvement in the physical condition shows particularly in gains in weight. Elberfeld, for example, reports for the year 1912, after the forest school had been open for 195 days, an average gain of 3.4 pounds for 170 children whose attendance was between 21 and 195 days. Sixty-six children are grouped according to their attendance.

*Gain in weight of children at the Elberfeld forest school.*

Children attending.	Period of attendance.	Gain in weight.	Average gain.
	<i>Days.</i>	<i>Pounds.</i>	<i>Pounds.</i>
5.....	195.....	31	6. 18
15.....	More than 100.....	63	4. 2
46.....	21 to 100.....	111	2. 41

The reports of Muehlhausen show the average gains of the forest-school children for all the years since the school was opened:

*Gain in weight at the Muchlhausen forest school, by years.*

Year.	Children attending.	Period of attendance.	Average gain.
			<i>Pounds.</i>
1906.....	100	May 7 to Oct. 31.....	4. 6
1907.....	200	May 6 to Oct. 26.....	4. 44
1908.....	200	May 4 to Oct. 24.....	4. 26
1909.....	200	May 3 to Oct. 23.....	4. 72
1910.....	200	May 3 to Oct. 22.....	3. 98
1911.....	200	May 2 to Oct. 21.....	4. 73
1912.....	200	May 1 to Oct. 19.....	5. 45
1913.....	200	May 5 to Oct. 25.....	4. 13

*Gain at Muehlhausen, 1912 report.*

Number of children.	Gain in weight.
	<i>Pounds.</i>
9.....	0 to 2.
44.....	2 to 4.
57.....	4 to 6.
43.....	6 to 8.
14.....	8 to 10.
12.....	10 to 12.
4.....	12 to 14.
1.....	15.

Judging from conditions governing admission, the physical status of children in the Rueckersdorf recovery place corresponds more nearly to that of the Chicago open-air school children than to that

of any other German school. The Rueckersdorf results may therefore be of special interest to those who wish to compare them with results obtained in American open-air schools.

*Gains in weight in Rueckersdorf open-air school.*

Years.	Children attending.	Average attendance.	Average gain in weight.
			<i>Pounds.</i>
1910.....	65	74.9	5.50
1911.....	108	74.08	5.88
1912.....	131	60	6.57
1913.....	158	69.84	6.91

The following tables showing improvement in general physical condition are taken from the annual reports of the Nuremberg-Rueckersdorf recovery place for children:

*Physical condition at Nuremberg-Rueckersdorf recovery place.*

Principal diagnostic findings.	Number of children.	Improvement.				Doubtful cases.
		Excellent.	Marked.	Good.	Moderate.	
1910.						
Anemia, malnutrition.....	29	5	6	15	2	1
Incipient tuberculosis.....	24	5	6	11	2	
Scrofulosis (thyroid glands).....	8	2	3	3		
Tuberculosis.....	1		1			
Chronic bronchitis.....	3	1	2			
	65					
1911.						
Anemia, malnutrition.....	57	14	22	17	4	
Incipient tuberculosis.....	37	7	11	16	3	
Scrofulosis (thyroid glands).....	3			3		
Tuberculosis.....	2		2			
Chronic bronchitis.....	6	2	6	1		
	108					
1912.						
Anemia, malnutrition.....	97	34	28	23	8	4
Incipient tuberculosis.....	23	6	7	7	2	1
Scrofulosis (thyroid glands).....	4	1	2	1		
Tuberculosis.....	2		1	1		
Chronic bronchitis.....	2	1	1			
Other defects.....	6	1	2	2		1
	134					

Most of the schools record weight, height, chest expansion, and the Tallquist test. The results as indicated by these different points are equally satisfactory.

All the forest schools try to keep track of their pupils after they leave. The children discharged from the forest schools connected with the children's recovery-places remain under the supervision of the information and aid stations for tuberculous people, and therefore are under medical supervision indefinitely. As a rule children from the forest schools are reexamined within three months after

discharge from school. These reexaminations show that in most cases the improvement has lasted.

Other differences in the management of individual forest schools may be traced to different underlying ideas. Those who lay the greatest stress upon the permanence of the good that is done will, like Charlottenburg, tend more and more to secure for the children a long and uninterrupted stay at the forest school; while those who believe its benefits should be widely spread will tend to observe a shorter period and reach a larger number of children. Muenchen-Gladbach as a rule shifts her pupils every two months; Aachen every six weeks. Muenchen-Gladbach has a regular attendance of 90 to 100 children. By her system, which, however, is elastic, it is possible to make the forest school accessible to 350 or 400 children in the summer.

There is also a divergence of attitude on the question of tuition. As a rule forest schools are free of charge. But the different municipalities may take a different attitude as to the extra care the children receive. Some forest schools, for instance, Nuremberg, advocate giving the advantages of the forest school free of any extra charge. Others, like Charlottenburg, try to get at least the expenses for food defrayed by parents who can afford it.

Other forest schools—for example, Muenchen-Gladbach—try to be as nearly self-supporting as possible. Parents with a yearly income of \$500 are expected to pay per day 20 cents per child; those with an income of from \$500 to \$750, 25 cents; with incomes of \$750 to \$1,000, 30 cents per child; where the income is more than \$1,000, 35 cents per child. These rates, however, may be reduced for special reasons. Other children are paid for by welfare societies and the municipal government makes a grant of \$1,250 a year for the schools.

The following will give an indication of the cost of forest schools in Germany: Muehlhausen, \$3,012.05; Muenchen-Gladbach, \$5,000; Elberfeld (buildings, etc., \$4,545.29, other \$790.45), \$5,335.74.

The Muehlhausen report for the school year 1913-14 gives the following interesting tables on the running expenses of the forest school since its foundation.

*Expenses of the Muehlhausen forest school, 1906-1913.*

Years.	Number of children.	School days.	Total running expenses.	Expense for food.	Total expenses per child a day.	Expense for food per child a day.
					<i>Cents.</i>	<i>Cents.</i>
1906.....	100	150	\$3,877	\$2,606	26	18
1907.....	200	147	5,690	4,121	19	14
1908.....	200	147	6,027	3,892	21	14
1909.....	200	147	5,562	3,832	19	13
1910.....	200	146	5,915	3,858	21	14
1911.....	200	146	5,803	3,723	20	13
1912.....	200	145	6,253	3,925	22	14
1913.....	200	147	6,612	4,000	23	14

The expense for food per child a day is about the same everywhere. Luebeck reports 15 cents; Elberfeld, 17 to 18 cents. Forest schools are not inexpensive institutions. They not only require additional facilities of plant and equipment, but also an added amount of personal attention by people who are competent as teachers, physicians, and nurses. The schools should be regarded as an investment, the interest of which comes back to the community with the increased health and efficiency of its citizens. By this standard Germany has put her stamp of approval on the forest school. In her painstaking work with the children Germany learned that compulsory school attendance meant danger to the health of a considerable percentage of her school children. She set about to devise a plan that would not only avert this danger, but which would, on the other hand, build up resistance and overcome those weaknesses by the application of the best therapeutic measures known to her scientific men. The plan she devised robs the child of neither health nor education, one at the expense of the other, but for her pupils, whose needs have heretofore not been discovered, understood, nor reached, she evolved a plan which gives them both education and health.

## Chapter VIII.

### OPEN-AIR SCHOOLS IN GREAT BRITAIN AND IRELAND.

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#### ENGLAND.

The publication of the first detailed report of the Charlottenburg Forest School early in 1906 immediately aroused the attention of European educators. Among those who spent some time at Charlottenburg was Dr. Frederick Rose, a medical expert employed by the London County Council. He returned from his first visit an enthusiastic convert to the cause of open-air education, and later made a second visit only to find his first impression verified and strengthened.

As a result of his report to the London County Council, that body, in 1907, opened an experimental open-air school in Bostall Wood, near London. One hundred anemic and physically debilitated children received care during the summer months, following practically the same daily program as the children at the Charlottenburg school, except that only three meals a day were given instead of five.

The success of the experiment led in 1908 to the extension of this work in three open-air schools, located at Birley House, Montpelier House, and Shrewsbury House, three private estates near London. The schools were in session from June 1 to October 31. School hours were from 9 a. m. to 7 p. m. each week day, except on Saturday, when school closed at 1 p. m. The children could remain Saturday afternoon if they wished for games, under the supervision of a teacher. One afternoon a week was set aside for visitors, and no one was admitted on other days except by special permission. About 80 children were on the roll of each school, and the average attendance for each was approximately 72.

Each school was fortunate in having for the exclusive use of the children large and well-wooded grounds, from 1 to 6 acres in extent. Kitchens, dining rooms, bathrooms, and offices were provided in the old mansion on each estate, but Doecker portable buildings, completely open on one side, were purchased for classrooms, and here or under the trees the children spent most of their time.

A two-hour rest period followed the noon meal. Each child had a steamer chair and an army blanket assigned to him at the school. Clogs and blanket coats were the only other articles of clothing regularly supplied.

The specimen time-table and dietary appended are typical of the arrangements still followed by most of the English day open-air schools.

Specimen time table.

Days.	9 to 9.30.	9.30 to 10.	10 to 10.45.	10.45 to 11.	11 to 11.40.	11.40 to 12.20.	12.20 to 12.45.	12.45 to 1.30.
Monday.....	Breakfast.....	Scripture or hymns.	Manual arithmetic	Recreation.....	Nature study.....	Drawing.....	Preparation for dinner (washing, etc.).	Dinner.
Tuesday.....	do.....	do.....	Arithmetic.	do.....	History.....	Singing.....	do.....	Do.
Wednesday.....	do.....	do.....	Manual arithmetic.	do.....	Geography.....	Composition (written).....	do.....	Do.
Thursday.....	do.....	do.....	Arithmetic.	do.....	Nature study.....	Drawing.....	do.....	Do.
Friday.....	do.....	do.....	Manual arithmetic.	do.....	History.....	Singing.....	do.....	Do.
Saturday.....	do.....	do.....	Recitation.....	do.....	Geography.....	Composition (oral).....	do.....	Do.

Days.	1.30 to 3.30.	3.30 to 3.45.	3.45 to 4.30.	4.30 to 5.	5 to 5.15.	5.15 to 5.45.	5.45 to 6.
Monday.....	Afternoon sleep.....	Physical exercises.....	1. Needlework..... 2. Gardening..... (for older boys).	Reading or recitation.....	Pack up chairs, apparatus, etc.	Tea.....	Prayers and dismissal.
Tuesday.....	do.....	do.....	1. Gardening (for Class 1). 2. Basketwork (for Classes 2 and 3).	do.....	do.....	do.....	Do.
Wednesday.....	do.....	do.....	Organized games, Old English songs and "Guild of Play."	do.....	do.....	do.....	Do.
Thursday.....	do.....	do.....	1. Needlework..... 2. Modeling in plasticine (for boys).	Reading or recitation.....	do.....	do.....	Do.
Friday.....	do.....	do.....	1. Basket work (for Class 1). 2. Gardening (for Class 2). 3. Modeling in plasticine (for Class 3).	do.....	do.....	do.....	Do.
Saturday.....	do.....	do.....	(Play for those who wish to remain.)	do.....	do.....	do.....	Do.

*Specimen dietary table.*

	MONDAY.	TUESDAY.	WEDNESDAY.
Breakfast...	Porridge and milk, sugar. Staff—Same, plus tea, bread and butter, bacon.	Porridge and milk, sugar. Staff—Same, plus tea, bread and butter, eggs, bacon.	Porridge and milk, sugar. Staff—Same, plus tea, bread and butter, bacon.
Dinner.....	Roast beef, peas, potatoes, sago pudding. Staff—Same, plus soup.	Boiled leg of mutton, haricots, potatoes, stewed prunes, custard. Staff—Same, plus soup.	Bolled cod, parseley sauce, potatoes, boiled currant pudding. Staff—Same, plus soup.
Tea.....	Milk and water, bread and jam, bread and dripping. Staff—Tea, bread and butter, bread and jam, toast.	Weak tea, bread and butter, cake. Staff—Tea, bread and butter, cake, toast.	Milk and water, currant and white bread and butter. Staff—Tea, bread and butter, toast.
	THURSDAY.	FRIDAY.	SATURDAY.
Breakfast...	Porridge and milk, sugar. Staff—Same, plus tea, bread and butter, haddock.	Porridge and milk, sugar. Staff—Same, plus tea, bread and butter, bloaters.	Porridge and milk, sugar. Staff—Same, plus tea, bread and butter, eggs.
Dinner.....	Boiled beef, dumplings, dried vegetables, potatoes, boiled rice and sirup. Staff—Same, plus soup.	Lentil soup, bread, boiled jam roly-poly. Staff—Same, plus steak, bread and butter, pudding.	Stew of mutton, barley, onions, potatoes, tapioca pudding. Staff—Same, plus soup.
Tea.....	Chocolate, currant and white bread and butter. Staff—Tea, bread and butter, toast.	Milk and water, white bread and butter, cake. Staff—Tea, bread and butter, cake, toast.	No tea.

<sup>1</sup> Instructors and officers.

The course of study was correlated with the natural surroundings of each school. The general features of the curriculum at the Birley House and Shrewsbury House (Shooter's Hill) schools are described in the chapter on Educational Organization and Curricula (see p. 205).

At the Birley House School, which is also conducted by the London County Council on a well-wooded estate near the city, the headmaster has organized the curriculum on a colonization scheme. His methods are thus described in a recent bulletin of the United States Bureau of Education:<sup>1</sup>

At the Birley House School Mr. Green, the headmaster, has organized the curriculum on a colonization scheme. Various minerals—coal, iron ore, copper ore, lead ore, and gold quartz—are buried in different parts of the garden, and the children go out to prospect for these. The finders become captains of industry. To work the mines the captains of industry engage laborers at the labor exchange, which is managed by one of the pupils, or receive applications for work. Boring is then proceeded with, shafts are sunk, winding apparatus is constructed, and the mineral is brought to the surface. Here arises the need of coal, and a system of transportation in the form of a miniature railway is organized, furnaces are set up, factories are planned, the possible markets for the products are considered, and the importance of a merchant service is recognized. So much for the industrial side of the colonization plan. Side

<sup>1</sup> Kandel, I. L. *Elementary Education in England*. U. S. Bu. of Educ., 1913, Bul. No. 57, pp. 107-108.



by side with this, the agricultural plans are developed. A portion of the garden is cleared and a miniature farm of six fields is prepared, and the different modes of fencing are applied to these fields. The ground is plowed and crops are sown in rotation, including wheat, potatoes, turnips, barley, oats, clover, and cabbages. A thatched log hut is built and furnished to serve as a homestead for the farmers, and the necessary outhouses—barn, stable, wagon shed, pigsty, hen roost, and dog kennel—are built around it. The nature-study scheme is correlated throughout with the work done on the farm and with the gardening operations. The general manual work is as varied as the activities which stimulate it. A rabbit warren, an aviary, insect cases, garden frames, cases for the weather instruments, etc., constitute the work in wood. Other media, involving puddling clay, making of concrete, and the mixing of cement, are employed in constructing a pond and making the garden and agricultural rollers on the basis of a drainpipe. Sufficient scope is afforded

FIG. 69.—Thackley Open-air School, Bradford, England.

In this scheme for the work in practical arithmetic in the measurement of lengths and distances, in estimating costs and quantities, in finding heights by means of simple measuring instruments, in making the graphical records of rainfall, barometer, thermometer, sunshine, etc., and in working out the other calculations required in connection with the garden and manual work. Provision is made in the time-table for the other subjects of the curriculum, i. e., geography, history, reading, composition, drawing, and singing.

The per capita cost of these schools for the summer of 1908, including salaries of teacher, nurse, attendants, rent, repairs, taxes, equipment, books and teaching apparatus, fuel, light, and water, exclusive of food, was about \$120, as compared with a per capita cost of \$30 in the ordinary school.

The education committee pays street-car fare when necessary. A fee of 50 cents a week is now charged each child who is able to pay, but the fee may be remitted entirely in cases of poverty.

The physical results are judged largely by gains in weight and height, by increase in chest development, and by the hemoglobin test. A medical examination takes place every two weeks, and great care is taken to tabulate the results carefully. The reports of English schools are particularly valuable in this regard. Several of these statements on results are included in the chapter on Results (pp. 229-232).

FIG. 70.—View of one of the porches, Thackley Open-air School, Bradford, England.

The elementary education act of 1899, under the section on defective and epileptic children, made special provision for the education of physically defective (crippled, tuberculous, anemic, etc.) and mentally defective children. The law states that the school medical officer must examine and select the children and that not more than 20 children be allowed to a teacher; that the curriculum must include manual training and that the hours of instruction be short. Provided these requirements are met and the school is properly certified by the education authorities, a grant of about \$20 a child may be made from the taxes and will be paid by the board of education to the authorities of the school. There may also be a grant for medical

treatment and care under part 1 of the medical grant regulation of the board of education. This amounts ordinarily to about \$40 a child. There are now 34 schools certified by the board of education for the reception of tuberculous and delicate children.

The tuberculosis legislation of 1911 provided a grant of \$7,500,000 for making grants in aid of sanatoria and other institutions of the United Kingdom for the treatment of tuberculosis—\$500,000 of this sum was set aside for grants to sanitarium schools for children suffering from pulmonary or surgical tuberculosis. The tuberculosis legislation also provided for the compulsory notification of all cases of pulmonary tuberculosis and the school medical officers

FIG. 71.—Open-air recitation, Barnsley, England.

have used these reports in tracing sources of infection and examining the children in houses from which tuberculosis has been reported.

Thanks to this generous provision for support and to the excellent results attained by the early schools, the development of the open-air school movement in England has been rapid. In the English year-book of open-air schools and children's sanatoria for 1915 the following are listed:

*Day schools for children suffering from pulmonary tuberculosis.*

Barnsley (West Riding, Yorks)	-----	Queen's Road Council School for Tuberculous Children.
Kettering (Northamptonshire)	-----	Council School for Tuberculosis Children.

*Day schools for children suffering from pulmonary tuberculosis.—Continued.*

Norwich (Norfolk).....	Clare House Council School for Tuberculous children.
Paddington (London).....	Kensal House Council School for Tuberculous Children, Harrow Road.
Reading (Berkshire).....	Whitley Council School for Tuberculous Children.
York (East Riding, Yorks).....	Castlegate Council School for Tuberculous Children.

FIG. 72.—Bermerside, a residential open-air school supported by the city of Halifax.

*Residential sanitarium schools for children suffering from pulmonary tuberculosis.*

Harpenden (Hertfordshire).....	National Children's Home Sanitarium School.
Holt (Norfolk).....	Sanitarium School.
Peppard Common (Oxfordshire).....	Kindercot Sanitarium School.
Nayland (Suffolk, West).....	East Anglian Sanitarium School.

*Residential sanitarium schools for children suffering from surgical tuberculosis.*

Alton (Hampshire).....	Lord Mayor Treloar Cripples' Hospital School.
Birmingham (Warwickshire)....	Woodlands Sanitarium School.
Eastcote (Middlesex).....	St. Vincent's R. C. Home for Physically Defective Children.
East Clandon (Surrey).....	Alexandra Hospital School.
Heaswall (Cheshire).....	Royal Liverpool Country Hospital School.

*Day open-air schools for delicate children.*

Birmingham (Warwickshire).....	Uffculme Open-Air Council School.
Bradford (West Riding, Yorkshire).....	Thackley Open-Air Council School.
Bristol (Gloucestershire).....	Open-Air School.
Darlington (Durham).....	Open-Air Council School.
Halifax (West Riding, Yorkshire).....	Bermerside Day Open-Air Council School.
Kettering (Northamptonshire).....	Open-Air Council School.
Lewisham (London).....	Birley House Open-Air Council School, Forest Hill.
Lincoln (Lincolnshire, parts of Lindsey).....	South Park Open-Air Council School.
Norwich (Norfolk).....	Colman Road Open-Air Council School.
Sheffield (West Riding, Yorkshire).....	Whiteley Wood Open-Air Council School.
Woolwich (London)	Shooter's Hill Open-Air Council School, Plumstead.

FIG. 73.—Open-air school for normal children at Carnarvon, Wales.

*Residential schools of recovery for delicate children.*

Clacton-on-Sea (Essex).....	The Ogilvie School of Recovery.
Halifax (West Riding, Yorkshire).....	Bermerside Residential Open-Air Council School.
Manchester (Lancashire).....	Swinton House (Physically Defective) Council School.
Roby, near Liverpool (Lancashire).....	Bowring House Council School.
West Kirby (Cheshire).....	Convalescent Home for Physically Defective Children.

In addition to schools for sick or delicate children, many private open-air schools are being established for well children, and archi-

fects are experimenting with types of school-house construction which will make it possible to convert all schoolrooms into open-air classrooms. In general the open-air classroom conforms to one of three types:

- (a) Increased open-window space.
- (b) Removal of one side wall—veranda form.
- (c) A loggia arrangement.

These ends may be met either by special classrooms attached to ordinary schools or specially constructed elementary schools on open-air lines. Examples may be found at Denton Holme, Carlisle, Burton Latimer, Bradford, Sheffield, and other places.

*The country school.*—Liverpool, Manchester, London, and other large cities are building country schools to which debilitated town

FIG. 74.—All class rooms in the Carnarvon School open into this marching corridor.

children may be sent for short periods during the summer months. There is practically no attempt at formal instruction, but the lessons which are provided are based on nature study, manual training, and domestic duties. (See p. 212 for description of curriculum at Roby House.)

*Playground classes.*—The report of the chief medical officer of the London Board of Education for 1913 records 88 playground classes in the city and classifies them as follows:

- (a) A playground class established as a center for delicate children from neighboring schools, the class being formed of suitable children from these schools and working in the open air all summer. Four classes.

(b) A class of delicate children of various educational standards selected from one school. One class.

(c) A class of children in the same standard of one school only, the same class being taken out each day of the week. Fifty-three classes.

(d) A playground class in which the pupils are drawn from a particular school only, but various classes are taken out in the open in rotation. Thirty classes.

London started this system in 1909. It is now extended to Birmingham, Blackburn, Bournemouth, Halifax, Sheffield, and elsewhere. Some of the classes recite in playgrounds adjacent to public-school buildings, others in public parks and open spaces situated in easy walking distances of public-school buildings.

FIG. 75. —The open-air pavilion used as a schoolroom at Bermerside.

The curriculum in most of these classes is planned to include extra physical exercises, manual work, and school gardening.

#### SCOTLAND.

Scotland has no special schools for tuberculous children, but many of her schools for physically defective children are conducted on modified open-air principles. Aberdeen, Dundee, Govan, and Paisley are among the smaller cities where this work is carried on.

Glasgow has established 18 centers for the education of physically defective children, but they are for the most part located in ordinary school buildings, without much possibility of introducing open-

air methods. The school board has recently built a large special school with open-air classrooms, which provides for physically and mentally defective children in entirely separate sections of the same building. Two other special schools of the same type are soon to be constructed. Children who need more day care are sent to the Biggart Memorial Home, Prestwick, Ayrshire.

Edinburgh, after experimenting successfully with the open-air education of physically and mentally defective children at the Willowbrae school, has joined with the Children's Holiday Fund Association in conducting an open-air school at the Children's Village in the high hill country at Humble, about 20 miles from Edinburgh. There

FIG. 76.—A recitation under the fir trees at Murthley, Perthshire, Scotland.

are five little cottages and a schoolhouse in the "village," which is used as a summer outing camp by the Holiday Fund Association. During the school year the board of education pays the holiday fund a certain sum per pupil for board and lodging and the parents of the children are charged according to their circumstances. Twenty pupils are sent out at a time, and the average stay during 1913 was nine and a half weeks. The school medical officers select the children from the delicate and physically debilitated pupils of the public schools. They react quickly to the healthy conditions in which they are placed, and last year the average increase in weight was found to be a half pound per week for each pupil. A quickening of intelligence and increased interest in work and surroundings are frequently noted by the teachers and by the children's parents. The schoolhouse



is so constructed that one entire side can be thrown open, and practically all the classes are conducted thus in the open air.

The study of tuberculosis among school children in Scotland is receiving particular attention from several medical inspectors, and the general opinion of medical men seems to be decidedly in favor of extending open-air schools in Scotland in much the same way as in England.

#### IRELAND.

To the Woman's National Health Association, under the leadership of the Countess of Aberdeen, belongs the credit for attempting to introduce open-air schools into Ireland. During the Ui Bresail Exhibition, which was held by the association in Dublin in 1911, an open-air school was conducted as an object lesson, and since that time teachers in a few cities have regularly taken classes out of doors for recitation in favorable weather. There is as yet no medical inspection of schools in Ireland and very little on which to build a well-organized open-air school system; so, although the commissioners of national education are thoroughly in sympathy with the idea, no classes have as yet been organized. The National Health Association is laying the foundations for the work by establishing school playgrounds and summer outing camps and by aiding in preventorium and sanitorium construction.

## Chapter IX.

### OPEN-AIR SCHOOLS IN OTHER FOREIGN COUNTRIES.

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#### ITALY.

Open-air school work in Italy was begun by the Anti-Tuberculosis Association of Padua in December, 1902. The head of the association at that time was Senator Achille de Giovanni, who was also a professor at the University of Padua. Through his efforts a site was secured at Barbarano, a suburb of Padua. The first colony accommodated 10 children and a teacher. Later the city of Padua gave a subsidy to assist in the establishment of two more pavilions, which increased the number of children cared for to 30. No attempt was made to make the teaching conform to that of the public-school system, and the experiment was called an open-air colony rather than an open-air school.

In 1905 a somewhat larger colony was opened on the outskirts of Padua, under the direction of Dr. Alessandro Randi, chief of the medical service of the city. The Red Cross Society furnished tents, and other benevolent associations secured the equipment and paid the current expenses. The children were chosen from the pupils of the primary schools by a special committee. They ranged in age from 5 to 12 years, and 54 were received during the two months in which the colony was open in the first year. During September they were kept out in the open air eight hours a day and were given two meals at school; in October the school day was shortened to six hours, and only one meal was provided by the school authorities.

These colonies have now developed into open-air playgrounds. In 1913 there was an average attendance of 200 children. The playgrounds are used for keeping children under observation until it can be determined whether they need additional care, and in building up those whose physical condition needs only the day open-air life. Children who need further attention are sent by the medical committee to mountain colonies or colonies by the sea or are placed out in suitable country families until their physical condition improves, when they are once more accepted in the open-air playground and remain until the medical committee considers them ready for discharge.

The Gymnastic Association of Padua has cooperated with the Anti-Tuberculosis Association in the management of these playgrounds. The president of the association has ruled that all the girls shall attend the lessons "without corsets, wearing broad-toed shoes, and without earrings." The classes were not at first intended for instruction, but merely for physical recuperation; it was not until 1907 that the city of Padua appointed a public-school teacher to take charge of the work. In this year the school medical inspectors began to separate from the other children in the public schools those who were physically less developed or whose health was in such condition as to require particular attention. Many of them were found to be children of families who were known to the Anti-Tuberculosis Association.

In 1908 four special classes, called the "classes for sickly children," were opened by the municipality. They were, from the beginning, allowed to have shorter hours of school, and the requirements of the program were somewhat reduced. When the weather permitted, they were sent to the open-air playgrounds for recitation. At other times rooms in the ordinary public-school building were used.

In 1911-12, 702 children, nearly 30 per cent of the first and second grade children in the city, were registered in these classes. In 1913, 15 classes for sickly children were conducted by the board of education, and it was considered that the actual needs of the situation in Padua were thus met.

In 1909 the city built a large and beautiful open-air structure for the use of the special classes. The style of building is that commonly seen in the European schools, a long shacklike structure, and as usual in Italy, open on all four sides, with canvas curtains which can be lowered if necessary. Most of the Italian schools are in session only from spring to fall, and the climate makes it possible to conduct them satisfactorily without more permanent buildings. The board of education is thoroughly in sympathy with the movement, and purposes to construct additional open-air school buildings until all who need such care are accommodated. The children remain in the open air from 8 o'clock in the morning until 6 at night, having one meal at 11 and another at 4. They spend the first hour of school day in rest, relaxation, and breathing exercises. About 600 children were thus benefited in 1912.

No statistical reports are available as to the results of the work, but the opinion of physicians and teachers is unanimous as to the remarkable improvement which the children show.

*Traveling open-air schools.*—Milan, Rome, Genoa, and Florence are also carrying on similar work. Rome has attained some fame because of the traveling open-air schools, or schools where the pupils carry a folding camp chair and books over their shoulders and walk from place to place under the direction of their teacher, holding

informal recitations wherever their fancy leads them to stop. There are certain objections to this method: First, that it is not practical for small or sickly children, since it is too fatiguing to carry along all the articles needed, especially when the roads are in bad condition; second, that they have insufficient protection in case of storm. It may further arouse complaint on the part of landowners if the children happen to trespass on private property.

*The Florence open-air school.*—The school in Florence is located in a large apple orchard, and a lemon conservatory with large windows is used as a schoolroom. It was opened on April 13, 1912, and has continued without interruption even during summer vacations. A class of about 30 children was chosen from the elementary schools by the physician of the board of health and the director of the clinic for children. Lessons were alternated with gymnastic exercises, games, short walks, and gardening. School hours were from 9 to 4 in winter and in summer from 9 to 6. Food was served three times a day. The physician in charge records a gain in weight superior in nearly every case to the normal increase in weight for the age of the child. Chest development also has been greater than normal. The expenses of the school are equally divided between the community and the anti-tuberculosis society. The teacher receives extra pay as compensation for the longer hours on duty, and during the period when school lasts until 6 p. m. he is relieved in the afternoon hours by a teacher paid by the municipality. The children receive warm milk and bread when they arrive at school, a warm lunch at noon, and a second lunch at 4. The breakfast and first lunch are furnished by the association and the second by the municipality. The school equipment is provided by the municipality, but the association gives each child a woolen raincoat and a winter cap and a large straw hat for the summer.

The purposes of the school have been to give assistance to sickly children or children predisposed to tuberculosis, and to make the institution an effective means of teaching prophylactics and the beginning of a rational reform in the hygiene of the elementary school.

Prof. Alberto Graziani made an extensive report to the Fourth International Congress of Physical Education, in which he summed up admirably the attitude of educators in Italy on the open-air school movement and the conclusions which they had reached. He believes that the congestion of cities, the poverty of the working classes, the lack of suitable amusements which would develop spirit and body alike, and the increasingly difficult struggle for existence compel a readjustment in the lives of many thousands of children if they are to be given a chance for healthy, normal development. "Growth of children in the open air," he calls the "last word in

modern educational methods," and points out that the open-air school originated in the necessity of bringing up children in a healthy environment and in the fact that this period of the development of children coincides with the period of their attendance at school. Weight, height, chest expansion, and condition of blood are the physical tests which he would have applied to the children in the open-air schools.

Wherever the natural conditions of the place permit, he thinks it is best to choose a hilly location for the open-air school, with woods and abundant water. There must be good drainage, and, if the site is not naturally wooded, many trees should be set out, preferably fir trees or resinous bushes. The size of the grounds should be proportioned to the number of pupils, but space should be left for the construction of sleeping sheds, general offices, garden, orchard, and playground. The schoolrooms should be formed by large pavilions, about 10 by 15 meters, with a cement floor, and open on each side and equipped with strong curtains or with folding doors. The roads and grounds ordinarily used by the pupils should be covered with a thick layer of sand or gravel, and the whole area should be fenced in.

School hours should be long enough to keep the pupils the greater part of the day. Three and a half hours of intellectual work is enough. Teachers should be chosen from those who volunteer to do the work, and those whose own condition demands open-air life should be given first consideration.

Meals should be given at regular hours, one immediately after arrival, the second at 12.30, and the third half an hour before dismissal. If only two meals are served, the first should be given at 11.30 and the second at 5. The two meals should represent two-thirds of the total nourishment and should contain a great portion of albumen. Meals should be followed by rest in the open air for not less than an hour and a half. After not less than three hours from the first meal the children may take a bath. Physical exercises are advisable, if properly supervised. Jumping, running, respiratory exercises, and modified singing are especially good. The children should wear clothing that permits full liberty of movement and leaves their bodies as unprotected as possible, so that air and light can act directly on their skin. Neck, arms, and legs must always be unprotected, and the pupils must wear short stockings and sandals.

Prof. Graziani sums up his conclusions as follows:

1. We must have faith in the advantages that may be derived from the open-air school, for our contentions are corroborated by sufficient experience.
2. The aim of the open-air school is to make possible the growth of the sick child in the open air.
3. All the large cities where congestion is great should have open-air schools.

4. The open-air school is the necessary supplement to the special classes.
5. The open-air schools should be completed by holiday playgrounds.
6. The open-air school should be a vast, shady space in which pavilions or porches may be erected to be used as schoolrooms.
7. The open-air schools will be preferably located outside the city or in its immediate vicinity. The children will walk to the school, or if the distance is excessive, means of transportation should be provided. It is not necessary, although preferable, that they be erected on the hills or in woods.
8. The open-air school ought to be a municipal institution.
9. The open-air school shall function only during the day.
10. The children of the open-air schools will be chosen among those physically needy, or among those whose parents have not the opportunity to take care of them properly.
11. The hours of the open-air school will be regulated, according to local conditions, and the time devoted to instruction will be shorter than in ordinary schools.
12. The program to be followed in the open-air schools will be very simple and will be of a practical and solid character.
13. The physical education in the open-air schools should consist of exercises in running and respiratory gymnastics. A shower bath should be taken as often as possible.
14. In the open-air school proper food should be abundantly supplied, and the clothing should correspond to the requirements of the school.
15. The teachers of the open-air school should be chosen among those who spontaneously apply for such work, and preference given to those who offer particular qualifications.
16. The open-air school is to be preferred to the many other institutions whose object is prophylaxis through open-air life, because it is more economical, more practical, and the benefit may be extended to a larger number of individuals. In any case it may be considered as a useful supplement to the other institutions.
17. The open-air school should be constantly supervised by school physicians.

#### FRANCE.

Preventive work among the children of tuberculous parents had already taken form in two definite directions before the day of the open-air school in France. Grancher had put into operation his splendid plan of "preserving the seed corn of the Nation" by sending delicate children from the homes of the tuberculous poor into selected families of healthy peasant stock where they could get nourishing food and outdoor life through the critical years of childhood. His own statement of the purpose and methods of the work as stated in a report published in 1915 deserves reproduction:

When tuberculosis enters a small dwelling and attacks father or mother, the infection of the children is almost inevitable, and it has seemed to me that the best way to fight against tuberculosis was to snatch away its prey.

In this tuberculous family, the work of preservation takes the children who are still in good health, from 3 to 10 years, and places them in the country in the families of peasants equally healthy, where our pupils spend all their school life until they are 13; even longer, for we are sure that many remain in the country and found peasant families.



The pupils are put in charge of good physicians of the neighborhood, who select the homes of the peasants and care for our children without charge.

Men and women teachers vie in their interest in our pupils.

Each child costs the organization, all expenses included, from 1 franc (20 cents) to 1 franc 20 centimes a day, according to where he is placed.

This selection of the still unspoiled seed corn of the human race realizes the formula which Pasteur applied to silk growing.

An ideally simple and scientific formula. It is for the child the best which can be opposed to the devastating scourge of tuberculosis; for, from the medical side, it gives a complete and radical solution. It suppresses, in fact, all the causes of tuberculosis; the remote causes, as the poverty and wretchedness of the large cities which prepare the soil, and the immediate cause, family infection.

From the social side, the child removed from promiscuousness of a dwelling infected with tuberculosis, and placed during a long period of his life in a good house, with plenty of fresh air and an abundance of food, becomes a new being, physically and morally. He reaches adolescence full of vigor, and may then choose between life in the country or return to the city.

According to our experience of the last four years, the country will be most often the choice.

Finally, saving these children, almost all condemned to become tuberculous, will destroy for the future so many centers of contagion and will little by little lessen the extent of tuberculosis.

All these advantages have not escaped the notice of those who are familiar with the work, and powerful friendships among statesmen, philanthropists, and physicians have helped to put it in the front rank in the antituberculosis campaign.<sup>1</sup>

*Vacation colonies.*—As a result of the second activity, the vacation colony idea, originated by Pastor Bion, of Zurich, in 1870, and promoted by many private philanthropic societies and by certain municipalities, 81,358 French children, in 1911, spent from three to six weeks at vacation colonies.

The scheme of operation which the city of Havre has developed at the municipal colonies of Grosfys and Montgeon may be taken as typical of others. Created by the city council on May 30, 1906, the management of the colonies is vested in a commission of 22 persons, who serve two years. Twelve are chosen from members of the city council, and they may add to their number 10 other persons "known to be interested in vacation colonies." The head of the department of public instruction is ex officio chairman of the association. The commission exercises full control over the selection of children for the colonies, the method of placing the pupils, the organization and supervision of the colonies, and the raising of funds for their support, if the city appropriation is not sufficient. Every year they must make a general report, which includes the financial statement to the city council.

The colony of Grosfys utilizes a country estate near Havre, with a great country house large enough to accommodate nearly 200

<sup>1</sup> From *Prevention de l'Enfance contre la Tuberculose*, Paris, 1912, pp. 1-2.

children at a time. The colony of Montgeon occupies specially constructed barracks in the forest of Montgeon close to the city of Havre and owned by the city.

The present plan is to use Montgeon for the less needy children and Grosfys for those who are more debilitated. A plan has just been undertaken, however, which provides for some 400 of the most needy and unfortunate children a stay in both colonies, which extends their vacation over the whole summer. In addition, many children are sent to Montgeon for the day only, leaving Havre by street car or on foot at 7.30 in the morning and returning in the evening. They are given a good dinner of soup, meat, vegetables, and desert at noon, but receive breakfast and supper at home. The children at Grosfys observe the following daily program:

**A. M.**

- 7.00 Rising hour; the children uncover the bed and open the windows and proceed to clean their shoes and make their toilets.
- 7.45 Breakfast; the children are required to remain at least 25 minutes at the table.
- 9.00 A walk through the woods.
- 10.45 Return.
- 11.00 Make the beds.
- 11.30 Luncheon; the children remain 40 minutes at the table; rest in the court.

**P. M.**

- 2.00 Luncheon in the open air.
- 4.20 Walk.
- 6.00 Return.
- 6.30 Dinner; the children remain at the table 40 minutes.
- 7.45 Hour of retiring.

Gymnastic exercises, different games, reading, and letter writing occupy the spare moments.

No visits can be paid the children by their families except by special permission, and great pains are taken to prevent too frequent guests.

The improvement in weight, height, and chest measurement, for both boys and girls, is marked.

The cost of food per day amounts to about 10 cents per pupil, and the total expense, including management and supervision, amounts to a little over 20 cents per pupil.

In the report made by the commission to the city council at the end of the season of 1913, the committee recommends that the attention of the municipal administration and the university authorities should be called to the advantages which would result from the establishment of an open-air school at Montgeon. The vice president of the commission, Dr. Profichet, has submitted to the commission a plan for receiving in an experimental way 100 sick children, 50 boys and 50 girls, who might be profited by the fresh-air treatment during the school year, leaving at Easter time if necessary. The



same recommendation was made for the colony of Grosfys, with the alternative suggestion that it might be used as a rest-recovery place for adults if not available for an open-air school.

*Open-air schools.*—The first open-air school in France was founded in 1904, at Montigny-sur-Loing, at the entrance of the forest of Fontainebleau, by M. Durot, a teacher who was moved by the delicate health of most of his little pupils to try to get them out of the poorly ventilated schoolrooms and their insanitary homes in the slums of Paris. He began the work without any help whatever, but it soon enlisted the support of physicians and educators, and in a short time he was able to erect a suitable building.

Lyon was the first city in France to have a municipal open-air school. In 1907 the Castle of Vernay, on the banks of the Saone, was thrown open to the work of caring for sickly children from poverty-stricken homes. Pupils are received in groups of 45 for periods averaging about three months. They follow the usual program of forest schools, and register the usual gains in health and mentality.

Nimes, Bordeaux, Toulouse, and Dijon have also excellent open-air schools.

*League for open-air education.*—The League for Open-Air Education was founded at Paris in November, 1912, by M. G. Lemonier, assistant editor of a school journal called "Hygiene in and through the school" (*L'Hygiene à et par l'Ecole*). Among its early members were M. Marcoux, prominent in antituberculosis work, and Mme. Jeanne Girard, school inspector of infant classes in Paris. The objects of the league are: First, to promote school hygiene and physical, intellectual, and moral education by conducting and popularizing open-air classes and school journeys. Second, to encourage, assist, and award prizes to all undertakings and experiences of this nature. Third, to promote, and if necessary, to found, playground classes, schools, and medicopedagogical establishments in the open air, whether through public agencies or private initiative. Fourth, to place members and pupils of the society free of charge in houses where the rules of hygiene are observed.

The association is supported by a membership created according to the size of the yearly contribution and ranging from the class called "founders," who pay a minimum fee of 1,000 francs yearly, to an honorary membership who pay 5 francs. No charge whatever is made the children who enroll themselves as pupils.

The annual income is to be spent in the following way: First, propaganda for education in the open air, by conferences, placards, bulletins, reviews, etc. Second, diplomas, prizes, and grants to persons and groups who shall have helped by their acts to develop theory into practice. Third, organization of school journeys, visits, walks, family excursions with studies and demonstrations in the open air, and

playground classes. Fourth, the establishment and installation of open-air classes of open-air schools by the location or purchase of ground sites, or estates or by construction. Fifth, the organization of school restaurants to distribute strengthening food to the pupils of the association. Sixth, the organization of vacation colonies or rest recovery places.

The first undertaking of the league was to start school journeys in the Paris schools. The second was to undertake a study of open-air schools of various types, the results of which are to be published. Various other similar undertakings are being started.

Many organizations of like purpose are affiliating themselves with the league, and the plan is to call an "Open-Air Congress" as soon as the branches number 100.

#### SWITZERLAND.

The type of open-air school for which Switzerland is best known is that developed by Dr. Rollier, of Leysin, and Dr. Bernhard, of St. Moritz, in connection with the sun cure of surgical tuberculosis. Complete elementary education is now provided for the little patients, who sit with arms and legs exposed to the healing rays of the sun, reflected from fields of snow. Photographs of boys clad only in loin cloths, sandals, and shade hat skiing or tobogganing down the Alpine slopes have made the spectacular side of the treatment widely known. The details, however, are carefully and slowly worked out, and the most minute precautions are observed in beginning the work.

Admission to the sanitarium is followed by a period of rest in bed, during which time the doors and windows of the room are gradually opened until the patient is accustomed to prolonged contact with the high mountain air. Then he is wheeled out on the balcony for gradually lengthened periods of time. Every day temperature, pulse, and respiration are carefully recorded; and tests of blood and urine are frequently made, so that the individual reactions can be noted. When it is certain that the patient is really acclimated, he is dressed in some white material, given snow spectacles and a white hat or a white umbrella, and is taken to the solarium, or "sun parlor," to begin the real treatment. Exposure to the direct rays of the sun is always begun with the feet, which are uncovered only for five minutes at a time for three or four times the first day with an hour between each exposure. On the second day the leg is bared as high as the knee. It is usually a week or more before the head and neck are stripped of covering. As the treatment proceeds, the skin turns a copper brown, which gradually changes to a chocolate hue. This is called pigmentation, and is considered the best index of improvement. It is said to render the skin immune

from bacterial infection. This continued exposure to the sun is particularly efficacious with tuberculous abscesses and sinuses, for it kills the germs and does not injure the living cells. In time children enjoy from four to six hours' exposure daily, and can go on with school work while taking the cure.

Switzerland has five open-air schools of the ordinary type, situated at Lausanne, Geneva, Neuchatel, Bischofzell, and Zurich. Zurich is the most recently established and may be taken as typical of the rest. The town has taken a lease of 30 years on a wooded tract of about an acre and a half on the outskirts of the city. The main building includes on the first floor a large diningroom, with kitchen and office, and on the second floor a classroom for use in bad weather, and rooms for the housekeeper and teacher. A large veranda opens direct from the diningroom upon the playground.

The school physician and public-school teachers together choose the children who are debilitated and seem to need change and extra food. Tuberculous children are cared for in the sanitarium schools.

Each morning the children gather at the tram station in town and proceed to the school in groups under the guidance of a teacher. At 8 a. m. comes the breakfast of bread and milk; at 10 o'clock bread and fruit; dinner at 12; and supper at 6. After breakfast one-half of the children attend classes, while the other half play games, and after the morning luncheon the process is reversed. The class periods are 25 minutes each, with 5 minutes intermission between recitations, and there are four such periods during the morning. After dinner come two hours of complete rest, followed by two hours of play or excursions through the woods.

The local board of education pays the salary of the teacher and the cost of the school materials. Children who are able pay 1 mark a day and any deficit is made good by the Children's Benevolent Society. The school was started by the Anti-Tuberculosis League, and the cost of the building was raised by private subscription and contributions by various benevolent societies.

The famous holiday colonies or vacation homes which are now common in all the European countries were begun in Switzerland by Pastor Bion, of Zurich, in 1876. In 1909 more than 8,000 Swiss children spent three or more weeks on such trips at a total cost of 44 francs per head. At first the whole expense was met by voluntary contributions, but of late the municipalities have realized the value of the work and are beginning to assume the cost. The plan is to send the children in groups of about 20 and in charge of a married teacher, sometimes to an inexpensive hotel in the country, but more often to houses built or rented for the express purpose. Some towns have provided holiday homes of their own. In addition to the colonies, some children from the lower grades are sent to peasants' homes in

the country to help in the lighter forms of farm work, in watching the goats or tending the cattle.

The Guild of the Wandervögel consists of about 1,000 boys and girls over 14, who go off in separate groups under the guidance of a teacher on long tramps at least once during the year. Each group carries along a big aluminum pot which will boil a gallon or more of soup, and they camp at night wherever the fancy strikes them, often sleeping on hay or straw in barns or in the open. They now own three mountain huts, which are the centers from which the excursions start.

School gardens and day school journeys have also been developed by certain cities as a means for giving the children proper training in the open air.

#### DENMARK.

The open-air school movement in Denmark has developed from the summer vacation colonies, and is still conducted largely in connection with them.

Denmark has for years been in the habit of arranging exchange vacations between children living in the city and those living in the country. Groups of city children are taken to country homes and given a few weeks' experience of country life, while at the same time the country children are enjoying the sights of the city. The vacation colonies, however, are planned especially for sickly and malnourished children, who need definite physical care.

The open-air vacation colony for delicate children, organized by the Children's Aid Association of Copenhagen, illustrates the kind of work which is carried on. This association realizes that the cause of sickness and physical subnormality in school children is often largely due to the economic situation and condition of their homes. In many cases the homes are not able to restore the children to strength after a long sickness. In other cases children suffer from chronic undernourishment. Experience has shown that it is possible to restore such children to full strength by a stay in the country under good conditions for a couple of months during the summer, or at least to give them such a good start that the chances are favorable for a complete recovery.

The municipality of Charlottenburg has given to the Children's Aid Association free use of a farm owned by the city, at Lille Bellaard. The farm buildings have been considerably remodeled, and free transportation is provided for the children on the street railway.

The colony was started in 1905, and since that time it has had under its charge 973 children. At present it is open from May 15 to September 16. During the summer 136 children are cared for, in

two divisions, with periods of two months each. A medical certificate is required from each applicant for admission, and these applications are then passed on by the examining physicians of the board of directors. Preference is given the children who come from the poorest homes.

The children meet at 8 o'clock in the morning and are sent home at 7 o'clock in the evening. They have four meals daily: Breakfast at 8, luncheon at 11, dinner at 3, and supper, including all the milk they can drink, before they are sent home. On birthdays the flag is raised, and the children have chocolate. The total number of days present in 1912 was 7,084, the total cost of the food was about \$1,000, and the daily per capita expense for each child was about 13 cents.

The management of the house is in charge of a matron, assisted by the older children. The children are taught how to set the table properly, to wait on table, wash dishes, and perform other simple household tasks.

Shoes are bought for all the children and blouses are provided for the boys and aprons for the girls, in order to save their own clothes as much as possible. They are also given toothbrushes, nailbrushes, soap, and towels.

Except for the time necessary for meals the children spend the entire day in the open air. After dinner one hour's rest is given in reclining chairs. On rainy days the barn on the farm is used and the time is passed in play, dance, and song.

It is easy to see from the changed appearance of the children, from their greater liveliness, perseverance, and excellent appetite that such a life has an excellent influence on them physically and mentally.

They are weighed once a week, and the reports show that they make good gains.

*Results of stay in the colony, on weight.*

Number of children.	Total weight.	Increase in weight.	
		Total.	For each child.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
First division (52 days in the colony):			
35 boys.....	1,984	68	2.0
35 girls.....	1,982	98	2.8
70 children.....	3,966	166	2.4
Second division (54 days in the colony):			
34 boys.....	1,944	196	5.7
32 girls.....	1,792	177	5.5
66 children.....	3,736	373	5.6

In order that the children may not, during their absence from school, fall too far behind their class, an open-air school is conducted at the colony, in which lessons are given in Danish, arithme-

tic, nature study, and singing. The children are divided into six classes. Each class has two half-hour lessons daily in Danish and arithmetic.

There is abundant opportunity for nature study in field, garden, and farm. The children have small gardens in a corner of the common garden. They are supplied with plants, but the arrangement is left entirely in their hands. Most of them raise flowers, radishes, cabbages, and peas. Prizes are awarded to the best gardeners. In another corner of the garden the children are permitted to dig and work to suit their own pleasure. They build caves, castles, and fortifications. A sand pile, seesaw, and swing are highly popular. The day passes so rapidly with games and study that there is hardly time enough for all that needs to be done.

In the evening, after supper, the children stand in line in the yard while the flag is carried to the front; then, with drums and fifes playing, they are led to the street car for the homeward journey.

Each of the divisions has three day excursions—one trip on the steamboat to Elsinore, one visit to the zoological garden with luncheon, and one trip to the Deer Forest.

#### NORWAY.

The city of Bergen maintains an open-air school at Mjolfjell, to which 30 delicate children from the city are sent for a month's recreation and instruction. The community has appropriated 1,000 crowns (\$268) for this experiment.

#### SWEDEN.

Sweden is said to lead the other nations of the Scandinavian group in respect to the provision of school gardens and vacation colonies. In many of the larger cities of Sweden it has been customary during the last few years to send school children who are in special need of building-up into vacation colonies during the summer. They were started in Stockholm in 1884; and 356 colonies, a total of 8,751 children, had been sent from that city between 1885 and 1900, exclusive of some colonies provided by certain industrial companies for children belonging to their workmen. Between 25 and 30 children were sent in each group. They remained about two months, and the total daily cost per child amounted to about 15 cents.

In 1907 Stockholm seriously considered the question of establishing a forest school. The municipality appointed a commission to make a general investigation into the teaching of sick and delicate children, and the decision was that it would be better to extend the work of the vacation colonies, rather than to proceed with the forest school at that time.



## HOLLAND.

Various cities in Holland have interested themselves in summer colonies for needy children and in the school-journey movement. Recent information on but one open-air school has been secured. This is maintained by a private organization and is now located in the sand dunes near The Hague. The work was begun in 1905 on a very small scale in a private house and garden which had been given, rent free, for six weeks. The funds supplied were meager, and the 42 children who were admitted were compelled to bring their own forks, spoons, etc. The society supplied food and instruction.

FIG. 77.—Open-air school near The Hague, Holland.

In 1906 another house, with beautiful large gardens, was also given, rent free, to the society, and here the children stayed three or four months. As the work went on and increasing numbers of children applied for admission, the interest of the public grew until the city authorities became interested, and in 1913 gave the ground for the establishment of a new and larger school. The society bought several Doecker portable houses and prepared to accommodate 50 children. The pupils admitted are from 7 to 13 years of age. Children of tubercular parentage are given the preference.

The medical officer of schools of The Hague conducts the physical examinations. Children with heart disease, chorea, or other nervous complaints are not admitted.

All the expenses are paid by private contributions. Each child is supposed to pay 6 cents a day. Any deficit must be met by the society. At the head of the establishment is a social worker who gives her services without pay and directs the teachers as well as the household staff. She is assisted by a nurse, a cook, a cleaning woman, and two teachers. The responsibility for the children's welfare, however, is made to rest as much as possible upon the parents. As soon as any difficulty arises as to the child's health, character, or scholarship, the parents are consulted. Parents' meetings are held frequently, and the medical officer discusses with them the necessity of fresh air, cleanliness, and plain but abundant food. The physician visits the school daily for a short time, and once a week conducts a thorough examination of one-sixth of the children, so that once in six weeks every child gets a thorough physical examination. The amount of physical exercise which may be taken is designated by badges, which all children wear. A white badge is given the children who may run about and play and attend the lessons; a blue badge for those who may go to school, but are not allowed to run about or play vigorously; a red badge for those who are on complete rest and may neither play nor take part in school work. Such games as football are allowed only to those with white badges, and skipping is forbidden to all the children.

Twice a week each child gets a shower bath or a tub bath, according to the doctor's instructions. Toothbrushes are provided, and the teeth are cleaned regularly each morning at the school. Twenty minutes of breathing gymnastics are prescribed for each child daily, except for those who are on complete rest.

The children gather at 7.30 at the station in The Hague and are escorted to the school by the nurse. They arrive about 8 o'clock, and at 8.15 a breakfast is served, consisting of porridge, bread and butter, and milk. At 10.30 they are given a glass of milk and a piece of black bread, and at 12.15 a dinner of meat, potatoes, vegetables, and a dessert, sometimes a pudding and sometimes fruit. After dinner they rest from 1 until 2.45. At 3 they are given milk and black bread again, and at 5.30 they have supper of bread and butter or bread and jam, with milk. They leave the school at 6 and reach the city station at 6.30.

The lessons are given as far as possible entirely in the open air. Each child has instruction for 2 hours in the morning and 45 minutes in the afternoon. The needle work and gardening are done by both boys and girls, and add greatly to their enjoyment of the school. Otherwise the curriculum corresponds to that in use in the regular schools in The Hague.

After leaving the open-air school and returning to their own school in town, the children are kept under careful supervision, and



at Christmas and Easter, following their stay at the open-air school, they are again examined by the medical officer, and if necessary enrolled for a second summer in the open air.

Up to this time the school has been open only from the 1st of May to September. It is the plan of those interested to hold sessions the year round, as soon as finances will permit.

The purposes of the school, as its promoters outline them, are:

First, physical education. The restoration of health to weak children predisposed to tuberculosis, by fresh air, rest, cleanliness, and good food.

Second, intellectual education. By teaching during shorter hours and with smaller classes.

Third, moral education. By cultivating the feeling of unselfishness, readiness, and responsibility, perseverance, and tolerance.

Fourth, home education. By giving each child a small but responsible task in the household—as clearing away and washing up breakfast and dinner things, preparing vegetables for the table, waiting on table, etc.

Fifth, love for nature. By giving the children small gardens, and by making them responsible for the care of the whole place, and by taking them on nature study walks in the woods, among the dunes, and along the seashore.

#### HUNGARY.

The first open-air school in Hungary was established at Szombathely, by the Anti-Tuberculosis Association of Vas County, in 1908. This association was also the first to conduct a free dispensary for the treatment of the tuberculous poor, and the open-air school arose in part from its knowledge of the conditions in which children in the families under its treatment were growing up.

The city of Szombathely placed at the disposal of the association a 10-acre tract of wooded land, on which the association built a small frame structure consisting only of kitchen, office, and a large open-sided room used for recitation and rest in bad weather. During the first summer the school session lasted only six weeks, but even in this time the gains in weight, in hæmoglobin, and the improvement in appearance and mental vigor were so noticeable as to convince the city authorities of the value of the school.

Accordingly, in 1909 the municipality constructed a larger building with two dormitories, two verandas, kitchen, provision room, and living quarters for the matron. The building has a southeastern exposure and is located on the edge of the forest, where the growth is not too heavy to prevent free access of the sunlight to all the rooms. A good spring provides water for all purposes. There are accommodations for 50 children, 20 of whom remain all night.

The head physician of the Anti-Tuberculosis Association and the chief dispensary physician select the children who are to be admitted. Only physically debilitated children are chosen, and those with

tuberculosis and anemia are given preference. They must come from needy families who are unable to get for them open-air treatment in any other way. No children suffering from advanced tuberculosis or having any contagious or organic diseases and no epileptics are admitted.

The children meet at 6.30 in the morning at a school building in Szombathely and proceed to the forest school under the guidance of a teacher. The teacher is expected to look them over before starting, and if any one appears to be ill, to send him home. Even in case of bad weather the children are expected to meet at the city school noted above, as the teacher alone decides whether it is wise to

FIG. 78.—Open-air school, Szombathely, Hungary.

attempt the trip to the forest school. If they do not go, they are taught in the school building in town.

The daily program is similar to that in other forest schools. It includes a two-hour rest period and the daily cold-shower bath. Each pupil receives a blanket, underwear, a gymnastic suit, and shawl or collar made of a material called "loden," which are all numbered and may not be taken from the school. Even plates and drinking cups and other table utensils bear numbers and are used by the same pupils each day.

The matron has charge of the dormitories at night and is expected to instruct the resident pupils on days when the teacher can not bring

the others out from town. Under her direction the older girls assist in setting the table, washing the dishes, and making the beds, taking turns in the assignments from week to week. The boys at the same time care for their own dormitories and work about the school grounds. During the months when the school is not in session the matron visits the parents of the children who have attended the school and prevails upon them to keep the children in attendance at the dispensary. She explains to them the value of home sanitation, including heating, lighting, and general hygiene. If small operations are necessary, she will secure the written consent of the parents for such an operation, and take the child to the hospital or dispensary to have it done. She is expected to keep a record of this follow-up work and turn over the notes to the Anti-Tuberculosis Association.

The teacher is supposed to be governed by the regulations issued by the city board of education. He appears at the meetings of the school board of the third district and reports on conditions at the forest school, thus keeping the supervisors informed of the progress of the work. He is instructed to pay special attention to individual instruction and to give plenty of manual work. He must see to it that the children do not overexert themselves mentally or physically, and try to direct their education in such a way as to render punishment unnecessary. He must make a written report regarding the progress made by the pupils to both the board of education and the Anti-Tuberculosis Association.

Many educators and officials in Hungary have gone on record in favor of open-air schools. Dr. Sandor Gerlitz, in a lecture delivered before the Hungarian association for child education at Budapest on January 11, 1913, said:

It will not be surprising to note that the diseases caused by poor housing, especially tuberculosis, are lessening the population when we consider that 58,000 children are living in overcrowded rooms in Budapest, in some cases with 6 others in the same room. More than 60,000 children have died of tuberculosis in Hungary within the last 10 years. The number of those who contracted the disease, no one is able to judge. The largest number of children naturally are the victims of immediate contagion on account of poor housing conditions and on account of contact with other consumptive relatives. \* \* \* For this reason and for the sake of affording protection against tuberculosis until such a time when we will be able to eliminate the healthy children from families affected by tuberculosis, education in the open air must have an enormous importance. \* \* \* By following this method we will be able to save many children, who otherwise would become sure victims of the disease, for society and the nation, and will succeed in gradually wiping out this great peril.

## CANADA.

In Canada the antituberculosis movement has been largely responsible for establishing the earliest open-air schools. They have sprung up in connection with hospitals, dispensaries, and sanitarium, and in only one instance has the board of education been directly responsible for the work.

This exception is at Toronto, where a true forest school has been conducted by the board of education in Victoria Park since 1912. The park is close to the town and easily accessible by street car, and the Toronto Street Railway Co. gives free transportation to the open-air school pupils. Wooden shacks were erected which give protection to equipment over night and in which the children can recite,

FIG. 79.—The Forest School in Victoria Park, Toronto, Canada.

and rest in rainy weather. The children arrive at 8.30 and leave at 6.30. Upon arrival they have a breakfast of cereal and bread and butter; at 10.30 a glass of milk, with bread and butter; at 12 a dinner of soup, meat and potatoes, a vegetable and a dessert; and at 5.30 a light supper of milk, bread and butter, jam or cookies is served. At 1 o'clock all join in a two-hour rest period, for which the board of education provided wooden cots with woven wire springs, a single blanket, and a small pillow. These articles are all numbered, and each child is responsible for the care of its own.

Teacher and nurse camp in the park over night, while the man principal and 10 or 12 of the most needy boys camp in army tents.

The nurse teaches the children how to use a tooth brush, and each child is required to clean his teeth after each meal. She gives talks on cleanliness, care of the body, wholesome food, manners, deportment, and nature study, and also requires breathing exercises. Every day a certain number of the pupils take a tub bath. The teeth of all the children are put into good condition by the dental inspector, who removes stains and tartar, takes out jagged roots, and fills the decayed teeth. At the close of the school year 1913 he reported as follows:

I wish to draw your attention to the beneficial results of the regular and careful brushing of the teeth by the children under the nurse's guidance. At the close of the school the mouths of these pupils were, in practically every case, models of cleanliness. If the same regular care that was practiced in the forest school could be carried out in all our public schools it would revolutionize the mouth conditions among children.

The testimony of the principal touching the changed dispositions in the children is significant. He says:

The children came to the school dull, stupid, and unresponsive, with but little evidence of developing mentality. It was a great pleasure to watch the awakening and quickening intelligence; to see apathy, dullness, and stupidity replaced by intelligent alertness and activity; to note the bright eye and quickening movements; to see the natural interest in everything that surrounds the child, which evidenced an awakening mind, but even this quickened mentality is not the only result, for the child has learned something in deportment—to lift his hat to a lady; to smile back "thank you" for a service rendered; to eat and drink decently at the table; to appreciate the beauty of a view, wild flowers, the lure of the woods and majesty of the rolling sea; to recognize his Creator in the things of nature. There has been an uplift to the whole moral being, the effect of which I believe will never entirely pass away.

The school was in session from June to September in 1912, and from May to November in 1913. Seventy children were in attendance the first year. In the second year the number had increased to 100, and the board of education voted to establish a second school for 125 children in another part of town.

Open-air schools in connection with preventoria are conducted at the Mountain Sanatorium in Hamilton, Ontario, which is maintained by the Hamilton Health Association, and accommodates 20 children; at the preventorium of the Imperial Order of the Daughters of the Empire, in Toronto, with a capacity of 60 children; and at the preventorium of the London Health Association, of Byron, Ontario.

The Royal Edward Institute for the Study, Prevention, and Cure of Tuberculosis, at Montreal, has an open-air school for 35 children, on a second-story porch of the dispensary building. The pupils are all under the supervision of the dispensary at home as well as in school. School is in session the year round, and the curriculum

follows that in use in the Montreal city schools. In the first year of its existence all but 4 of the children successfully passed the city school examinations for their grade. The medical officer reports the following results for the year 1912-13:

Of the 37 cases treated in the open-air school during the year, there are 3 pretubercular, 19 early cases, 11 advanced, and 4 far advanced.

The results may be classified as follows:

(1) Pretubercular patients—These attended only a short time, but were improved in health.

(2) Nineteen early cases—8 have been sent back to other schools as being cured; 5 dropped out before a conclusion had been reached; 6 are at present attending school.

(3) Eleven advanced cases—3 of these have been returned to other schools as cured; 1 case left showing improvement; 1 case left not improved; 2 dropped out; and 4 are at present at school.

(4) Four far-advanced cases—2 of these are still at school; 1 left improved in health; and 1 has since died.

The cases which have been discharged as cured and sent back to the other schools show no active disease whatever in the lungs, all signs of the disease having disappeared. The future of these will depend a good deal on their home conditions, but given suitable hygienic surroundings and reasonable attention at home, I feel sure that they will be able to resist any further encroachments of the disease.

The Sick Children's Hospital, at Toronto Island, in 1910 opened the Heather Club Pavilion for tuberculous children, where an open-air school with a capacity of 50 is carried on for six months of the year. In 1913 the National Sanitarium Association opened an excellent hospital and open-air school for 80 tuberculous children at Weston, Ontario.

With so favorable a start and with the public interest constantly stimulated by the public-health association and the antituberculosis leagues, open-air school work in Canada bids fair to establish itself as an integral feature of the public-school system of the Dominion.

#### AUSTRALIA.

The climate of Australia is particularly favorable for open-air work. The supervisors of grammar school work throughout the various districts of Australia report that the custom of taking classes out-of-doors for recitation is increasing, and strongly advocate its extension, particularly in geography and arithmetic classes. School gardening and out-of-door nature study are features of the curriculum in all parts of the island.

Open-air classrooms of the type shown in figure 80 have been erected near Sandringham, Victoria. They accommodate 50 children each and cost about \$650. They are built of wood and roofed with iron. Three of the walls are boarded to a height of 3 feet, and above are filled with navy canvas blinds which are adjustable and can be

opened to any height. The fourth side of the building is entirely inclosed. The buildings are constructed on sleeper plates and are thus easily portable.

Many schools have play pavilions of similar construction which are used as open-air recitation rooms in fair weather.

#### RUSSIA.

Early in 1914 a letter was received from Moscow, Russia, stating that it was the plan to reorganize the Prince Peter Georgievitch

FIG. 80. Open-air pavilion at Sandringham, Australia.

(Oldenbourgsky Elementary School into a forest school, and asking for information on methods of management and programs of work. It has been impossible to secure any further information about the progress of the school.

#### MISCELLANEOUS.

Requests for information on open-air school work have come from Japan, China, India, and South America, but no definite undertakings have been reported.

## Chapter X.

### THE OPEN-AIR SCHOOL MOVEMENT IN THE UNITED STATES.

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When the news of the Charlottenburg school reached the cities of America, it found many people thoroughly alive to the fact that every community has its share of physically backward, anemic, and tuberculous children, and that something should be done for them.

New emphasis on the problem of the debilitated child has resulted from every new movement in the social service field in the last quarter of a century. One of the distinguishing features of this period has been its emphasis on human values and the constructive agencies which have been set to work to improve conditions.

In aiding needy families, social workers have helped to secure hospital, medical, and other service for physically subnormal children. Visiting nurses have given them physical care and endeavored to adjust the home to their needs. Truant and probation officers have found such children a difficult part of their problem and have tried to keep them in school or to befriend them in trouble and get them out of court.

The social settlement has become an important factor, and its workers have taken such children into their clubs and classes and endeavored to supplement their fragmentary education. Country outings and the Boy Scout movement took such children for vacations in order to give them fresh air and to improve their physical tone. Vocational guidance workers have undertaken to find them jobs and to make them secure in industrial pursuits. Social workers have found, too, that this type of child is father to the man without a job—who requires charitable assistance, almshouse care, hospital and sanitarium treatment, or possibly a correctional institution.

Experiences gained in these and other fields had crystallized public opinion and created a sentiment that at once recognized the open-air school as a resource that was needed to help solve the problem of the debilitated child. Two lines of work deserve a special mention in this connection, for, more than any other influence, they created a background for the open-air school movement—health inspection in public schools and the antituberculosis crusade.



*Health inspection.*—This work began in a systematic way in the city of Boston in 1894.<sup>1</sup> Its original purpose was to control the spread of contagious diseases. It had been observed that compulsory school attendance often meant compulsory contagion, for outbreaks of such diseases were of frequent occurrence on the opening of school each autumn. In an effort to control this problem the city was divided into 50 districts, and a medical inspector chosen for each. The physician's duty was to detect and eliminate from the schools those who were suffering from communicable disease. This experiment proved so successful that it was copied by other cities. It was soon discovered, however, that mere elimination of contagious disease was only one phase of a very large problem. The child who called attention to himself by such communicable disease was often found to be suffering from other defects which needed attention. Defective vision and hearing, inability to see the blackboard or hear the teacher's voice, nose and throat difficulties, and many other ailments were found by these medical inspectors, and many of the children were suffering to such an extent that their educational progress was seriously handicapped.

In this way health inspection, now almost universal in the larger cities, came into existence as an educational measure. Everywhere this work detected large numbers of children who needed attention which the schools as ordinarily conducted were not prepared to give. The retarded and badly classified child as a problem in school management and efficiency was discovered. It was found also that children of this type are among those who early fall out of school to become applicants for blind-alley jobs and to swell the ranks of those who make unsuccessful efforts at filling their places in society.

The summaries of health-inspection work in the public schools have called attention of the public to the problem of the physical welfare of the whole school population as no other movement has ever done.

*Antituberculosis crusade.*—Perhaps the influence that has most pointedly challenged attention to the needs of school children has been the antituberculosis crusade. Tuberculosis has for years been recognized as one of the most prominent causes of poverty. Consumption has appeared on death lists since the time of Hippocrates. Social workers in numerous agencies have been called upon to aid in the fight against this disease. Tuberculosis was regarded as hereditary, and the attitude toward it was one of helplessness and resignation until, in 1882, Dr. Robert Koch isolated the tubercle

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<sup>1</sup> Elmira, N. Y., had a school medical inspector as early as 1872. See annual report of the board of education, 1912-13, p. 12.

bacillus and proved that the disease is contracted only by taking the tuberculosis germs into the body. Then in 1885 Dr. Edward L. Trudeau established his cottage sanitarium in the Adirondack Mountains and by the application of therapeutic measures demonstrated that sufferers from incipient tuberculosis can be restored to their families and friends, to earning capacity and usefulness.

These inspiring and revolutionary facts laid a new obligation upon society. The antituberculosis crusade was one of the results. A rapidly increasing number of societies—National, State, and municipal—undertook to convey this news to the world through a campaign of education. These societies have carried on one of the most

FIG. 81.—The first open-air school in the United States, Providence, R. I.

definite and effective crusades that has ever been waged against any disease. It has had two objects in view: First, to acquaint the people with the new facts and to preach the gospel of fresh air, sunshine, rest, nourishing food, and wholesome living; and second, to establish sanatoria, hospitals, and other relieving agencies, for there was not alone the problem of prevention, but also that of caring for those who were already victims to this disease.

One of the most important agencies in this field is the tuberculosis clinic. This feature of the work places at the disposal of people, especially in the congested districts, a station properly equipped and manned with efficient doctors and nurses. To these stations anyone

who suspects he has tuberculosis may come for examination and treatment. It early became the practice in these rapidly multiplying clinics to examine all the children in homes where some adults were afflicted with tuberculosis. The result has been that more than 30 per cent of all the children from such families examined in these clinics show signs of infection. While tuberculosis is no respecter of persons or economic conditions, it is nevertheless most prevalent in crowded districts and homes of the poor. The income is reduced because the breadwinner is stricken and the family is obliged to live in cramped quarters, not infrequently in two or three rooms. Under these conditions it is almost inevitable that infection should spread to

FIG. 82.—An open-air school room in Allentown, Pa., which is used for both recitation and rest. The cots are folded and stacked in the rear of the room. For the rest period the chairs are moved forward, the cots then occupying the main floor space.

the children, especially when their resistance is weakened through improper nourishment and care. While the doctrine of hereditary consumption has been exploded, improper housing, overcrowding, and low wages make the spread of the disease almost as inevitable as if it were hereditary.

When it became known that tuberculosis is a community-born disease, that it is fed to the children in their food, taken into their bodies from contact with the clothing of a sick patient, or from sputum carelessly scattered, a new obligation was laid upon these workers, and they became aggressive in their efforts to create institutions and agencies for the proper treatment and care of children from homes where the disease prevailed.

No definite census has ever been made of the number of children needing treatment in open-air schools. There have, however, been many local studies and estimates, and these place the number of children needing such care at from 2 to 10 per cent of the total school population. The following estimates are taken from studies made in many different places.

The Municipal Tuberculosis Sanitarium of Chicago, which conducts 10 clinics scattered over the city, has on its books a list of 3,000 children who are tuberculous. The commissioner of health of the city of Chicago in 1914 instructed the health inspection staff of the Chicago schools, consisting of 100 physicians, to make a study of the children in need of open-air school treatment in their respective districts, and to report to him at the end of the school year. This inspection, which was casual, but which was nevertheless a conscientious effort on the part of the doctors to discover the children, resulted in a list of 5,248, or approximately 2 per cent of the total school population.

According to Dr. Leonard P. Ayres,<sup>1</sup> for the year 1909-10 in the city of Boston the candidates for open-air schools were selected by room teachers and nurses and submitted to the medical inspectors for final decision. There were then approximately 90,000 children in the Boston schools. The children selected by the teachers were reexamined by the school physicians, and 4,489 children, or almost 5 per cent of the entire membership, were found to need such care. Dr. Ayres also quotes from figures in Atlanta, Ga., where health inspection showed that children suffering from malnutrition, anemia, and cardiac diseases were 5.18 per cent of the total number. From St. Paul in 1909, 2.7 per cent were suffering from cardiac disease and tuberculosis. At Appleton, Wis., 3 per cent were suffering from malnutrition.

Dr. Ayres also quotes Dr. Henry R. Hopkins, of Buffalo, chairman of the committee on open-air schools of that city, who said in 1910 that about 7 per cent of the children in the city needed the same sort of treatment.

F. L. Hoffman estimates that 12,000 children of school age die annually from tuberculosis in the United States.

Sidney and Beatrice Webb, in their book on *Prevention of Destitution* (Chap. IV, p. 66), have the following to say about medical inspection in England:

When we get the child to school, knowledge of its condition becomes forced upon the community. The first results of systematic medical inspection are bringing home to our minds what every teacher knows, namely, that a large proportion of the children are not in a fit state to have the public money spent on teaching them, because they are suffering to such an extent from neglect as

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<sup>1</sup> Open-Air Schools.

to be unable to obtain full advantage of the instruction. What emerges from the cautious summaries of the chief medical officer of the Board of Education for England and Wales (Scotland and Ireland being at least as bad) is that out of all the 6,000,000 children in the elementary schools about 10 per cent suffer from serious defects in vision, from 3 to 5 per cent suffer from defective hearing, 1 to 3 per cent from suppurating ears, 8 per cent from adenoids or enlarged tonsils of sufficient degree to obstruct the nose or throat and to require surgical treatment, 20 to 40 per cent suffer from extensive and injurious decay of the teeth, 40 per cent have unclean heads, about 1 per cent suffer from ringworm, 1 per cent are affected with tuberculosis of readily recognizable form, and one-half to 2 per cent are afflicted with heart disease.

FIG. 83.—Anemic girl

If one takes the lowest estimate, 2 per cent, as the number of children in the total population whose physical condition is such that it interferes with the school work, it would mean 400,000 such children in the United States; if 10 per cent is correct, it would mean 2,000,000.

The original purpose of the open-air school was to secure outdoor life for the delicate child. Then came the plan of providing a shelter against inclement weather, to extend the period beyond the sum-

mer months. Later came the idea of bringing the "outdoor" into the school by throwing the windows open wide. The open-air school aims to so conduct the school life of the physically subnormal child that it will tend to restore him to normal physical and mental vigor.

*Class of children generally admitted.*—On account of the large number of physically debilitated children in the public schools the open-air school, especially in the United States, has endeavored to care, first, for the children who are anemic, undernourished, or whose general appearance indicates lack of resistance to disease; children

FIG. 84.—Anemic boy.

exposed to tuberculous infection by members of their own homes and who themselves show signs of infection by reaction to the tuberculin test, by elevation of temperature, by enlarged glands, and other similar signs.

*Class of children generally excluded.*—Those suffering from any communicable disease, and with severe diseases requiring absolute rest or hospital treatment; the mentally defective; children with open tuberculosis, i. e., forms of tuberculosis in which the tubercle bacilli are given off in the bodily excretions; children suffering from

tuberculosis of the bones, joints, and glands, which can not be protected by proper dressings, are usually excluded.

*Characteristics of the open-air school.*—Children should be admitted to the open-air school or open-window room on the basis of a thorough physical examination. Moreover, the period in the school should be covered by a medical and nursing service which undertakes to correct physical defects and handicaps and to adjust the work of the school to individual capacities and needs. Efforts should be made to secure the most advantageous cooperation of the home with the school work.

*A smaller number of pupils to each teacher.*—The open-air school aims to give a small number of children to each teacher—from 20 to 30 has been agreed upon as the proper size of class. This enables the teacher to understand her children better and to deal with them more nearly as their needs require.

*Fresh air and sunshine.*—The open-air school gives the child the physical advantage and mental stimulus afforded by an adequate amount of fresh air and sunshine. The school is characterized by a greater freedom of movement and a more elastic program than is usual in the schoolroom.

*Food.*—The anemic and undernourished condition of physically subnormal children is largely due to insufficient or improper food. The open-air school undertakes to supply this lack by furnishing food in sufficient quantity and variety and wholesomely cooked. A well-ordered meal is in itself a spiritualizing and refining influence as well as a body builder. No other hour of the school day has greater possibilities for the wise teacher than the one which concerns itself with the preparation and serving of food and the breaking of bread.

*Rest.*—Many of the children are suffering from conditions which call for an unusual amount of rest. Most children get too little sleep, and the irregular hours and lack of adequate sleep among tenement-house children are well known. Open-air schools generally have adopted the plan of giving all the children a period of an hour or more rest each day. In special cases the rest period extends to a day or more, until temperature subsides and physical condition improves. This can be done at school. It is often impossible at home.

*Curricula.*—The work in the open-air schools is generally characterized by greater freedom and elasticity. It should be more along motor and sensory lines—manual training, gardening, handwork of different kinds. The more intimate relationship of the teacher makes it possible to apply stimuli in more original and less technical ways than she is able to do in regular indoor school work.

*Personal hygiene.*—Personal hygiene is emphasized, dental needs are cared for, while frequently decayed teeth and diseased mouths are corrected. Bathing, regular habits of cleanliness, regularity of meals, the acquiring of a taste for proper kinds of food, and right habits of eating are taught. The aim of the school is "to weave together these different features in a process of education and hygienic living."

The open-air school came into existence to meet the needs of this army of distressed children.

It is significant that nearly all the civilized countries came upon the problem in very much the same way, and almost simultaneously

FIG. 85.—The health that comes from the out-of-doors.

reached similar conclusions as to the necessity of action. The results obtained in the open-air schools have been such that the movement has had a rapid development in the United States. The original school was established in Providence, R. I., in 1908. By the end of that year there were 3 such schools; in 1909 there were 7; in 1910, 15. So far the number of schools has doubled each year until now there are more than 1,000 open-air classes in 168 cities of 32 different States. The presence of an open-air school in a community is always a stimulating influence for better general health. Directly or indirectly it helps to move the public to action, looking to better ventilation, not



only in the schoolrooms generally, but in homes and public places as well. It is an object lesson of strong educational value.

Nobody has ever questioned the adequacy of the total supply of fresh air. The open-air school stimulates the community to see that each one gets his share. There is fresh air outside every building, and the efficiency of every schoolroom in the land can be increased by the periodic opening of windows and letting some of it in. The friends of the open-air school movement believe that in time the community will be satisfied with nothing short of right conditions of ventilation and hygiene for the whole 20,000,000 school children in the United States.

These pupils spend 100,000,000 hours each school day in schoolrooms. This means 11,415 years each school day, or 2,283,000 years



FIG. 86.—An open-window room.

in the 200-day school year. One of the greatest possibilities for loss of time and efficiency is in the listlessness, inattention, and the half-asphyxiation of school children, due to overheat and bad air in the schoolrooms.

The vitality of this movement is illustrated by the permanent buildings which are being constructed for open-air school purposes and by the attention which is being paid to health considerations on the part of school authorities. Still more significant is the fact that programs covering the whole field of physical welfare of school children are in process of evolution in different cities.

In Boston the school committee is committed to the following policy:

1. The extension of open-air schools until every child needing such treatment is provided for.
2. A maximum temperature of 66° F. for all classrooms.
3. Windows open on one side of each closed room at all times.
4. Periodic flushing of each classroom with fresh air.
5. Physical instructors in high schools relieved of duties one day each week to inspect and report heating and ventilating conditions in elementary schools.

FIG. 87.—Rest period, Elizabeth McCormick Open-air School No. 2.

6. The use of parks for open-air classes. The park board and recreation commission have given the school committee permission to use buildings and parks suitable for open-air classes.

Cleveland, New York City, Pittsburgh, Providence, and many other cities are developing similar programs. In California whole cities are reconstructing their school buildings on the open-air principle. The movement is thoroughly under way. Its goal is not only to see that each physically debilitated and backward child is cared for, but also that all the children of all the schools are given their full fresh-air and hygienic rights.

## Chapter XI.

### PREVENTORIA, SANITARIA, HOSPITAL, AND VACATION OPEN-AIR SCHOOLS.

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The key to the solution of the tuberculosis problem is "safety first" for the children in the homes of consumptives.

The danger from tuberculosis is, and always has been, particularly great in the homes of the poor, especially in families living in two and three room tenement homes, with poor ventilation and lack of sufficient sunshine. A number of different agencies and institutions have been created to protect the children from the ever-present menace of such homes.

Germany established "recovery places in the woods." In France one of the most effective methods is that of placing children from tuberculous families in carefully selected country homes. They are kept in such places for a period of years or until their health is established. In the United States, and in many other countries as well, day camps, preventoria, sanitarium, and hospital schools have been called into service.

It is this class of agencies and their relation to the open-air school that will be discussed in this chapter.

#### PREVENTORIA.

A preventorium is an institution established for the purpose of taking children who are under grade physically, and who come from homes where there is tuberculosis, and caring for them in such a way as to prevent them from falling victims to this disease. At the present time there are at least four preventoria of this sort in the United States: The Farmingdale Preventorium, in New Jersey; Ridge Farm, Deerfield, Ill.; the Lakeside Preventorium, near Hoxie, R. I.; and the Buckeye Road Fresh-Air Camp, near Cleveland, Ohio.

The first institution for the effective rescue of anemic, under-nourished children in the families of the tuberculous poor was built in 1909 at Farmingdale, N. J., by the New York Association of Tuberculosis Dispensaries. Dr. Herman Biggs, then commissioner of health in New York City, estimated that there were 40,000 chil-



dren exposed to tuberculosis in poor homes in New York City alone. The tuberculosis dispensaries scattered over the city were in touch with thousands of consumptive patients. The majority of them were the fathers and mothers or older brothers and sisters of younger children who were in constant peril from infection in the two, three, and four-room tenement homes of the tuberculous poor.

The doctors and nurses found it impossible to safeguard these children by anything they could do in and for the homes. There was urgent need of some near-by institution where they could be sent that they might be entirely removed from the danger of infec-

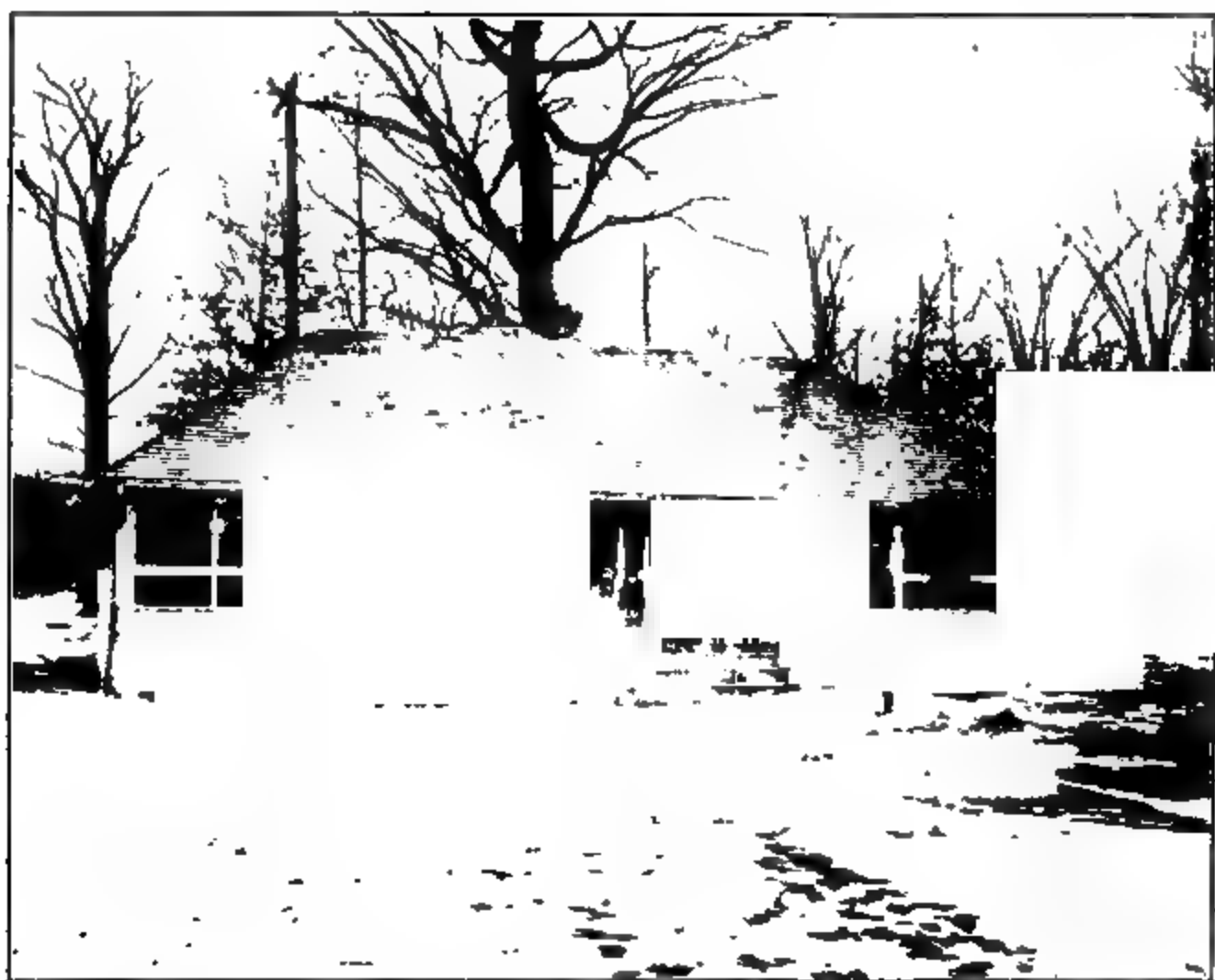


FIG. 90.—Herman Klefer Sanitarium Open-air School, Detroit, Mich.

tion and that their resistance might be built up. There was then no such place.

The summer-outing resources of relief societies and settlements were unable to meet the needs of tuberculous children, and, besides, their work was confined to two or three summer months and their children were sent usually for a stay of only one or two weeks.

Accordingly the Association of Tuberculosis Dispensaries purchased a tract of 170 acres of land in the sandy pine belt of Farmingdale, N. J., easily accessible to New York City, and on it built a sanitarium school. The plant consists of a reception pavilion, where all the children are quarantined for three weeks following admission,

a small infirmary, a school for boys, another for girls, and a large administration building, which includes a dining room accommodating 150 children.

The children are selected by the physicians of the Association of Tuberculosis Clinics and are taken from families in which there are patients under their care. The children are those whose physical condition makes them particularly susceptible to infection. The sanitarium school receives these children for a continuous period of night-and-day care. The average length of stay is about three

FIG. 91.—View from the veranda, Sea Breeze Hospital for Surgical Tuberculosis, Coney Island, N. Y.

months, and as the capacity of the institution is 150, about 600 children are dealt with in the course of the year.

The preventorium is partly supported by voluntary contributions and partly by a per capita allowance from the city. Thus far the cost, including all expenses, has been less than \$1 per day for each child.

The observance of a simple, wholesome mode of life, which includes fresh air, sunshine, food, sleep, play, exercise, cleanliness, regularity, and a spirit of comradeship between teachers, nurses, attendants, and the children, is mainly relied upon for results.

The average gain in weight for the usual three months' period is 7 pounds. There are occasional records, covering a longer period, running as high as 25 pounds. The bearing, mentality, vigor, and spirit of the children—though there is no such definite instrument

comparable to weighing scales to provide a tangible measure for mental life—show every evidence of equal improvement. The examining physician says that it is almost impossible to recognize the children on discharge, so great has been the change in their appearance.

In such an institution as Farmingdale, where health is avowedly the first consideration, school life might be expected to take second place. On the contrary, it is so well provided for that the children lose nothing from their grade standing by their stay at the sanitarium. Three licensed teachers are provided by the New York Board of Education, and in a two-hour school period a day for five days a week they have found it possible to keep the pupils up to their pre-

FIG. 92.—Massachusetts Hospital School, Canton, Mass.

vious school grade. Indeed, many children could advance a class during their stay at the sanitarium were it thought wise to increase the length of school hours. This is true in spite of the fact that the children received are, on the average, one grade in scholarship below the normal standing for their age, and many of them are even more retarded.

In addition to the regular school work, which corresponds to that of the grades in New York City schools, the girls are taught to sew, the boys to do gardening, and all the older children are assigned small household tasks in the sleeping shacks or in the dining room. They have free range over the broad acres of pine land and get a first-hand acquaintance with the fields and with the woods.

In the summer of 1914 a group of philanthropic women opened a small preventorium at Ridge Farm, near Lake Forest, Ill. In its construction and management they followed the Farmingdale experiment, and it is the plan eventually to introduce the work of the regular open-air schools as well.

**FIG. 93.**—Exterior, East River Homes. Half of the building to the right of the picture is leased by the New York Association for Improving the Condition of the Poor, and occupied by families where tuberculosis is one cause of dependency. Note open windows and beds on balconies.

A small institution of the same general nature was conducted near Hoxsie, R. I., by the Anti-Tuberculosis Association of Providence during the summer of 1913-14. A preventorium for tuberculous children has been maintained, but no school work is undertaken. The purpose here is chiefly to build up the resistance of specially needy children.



## SANITARIA.

A sanitarium is an establishment where convalescents, or persons suffering from disease, may be received for medical treatment, rest cure, and the like; in recent usage the term is particularly applied to places where patients suffering from tuberculosis may undergo open-air treatment. A sanitarium school receives children in the early stages of tuberculosis, either of a surgical or pulmonary nature. These are definitely sick children, and, though they follow much the same daily program as in a preventorium, they are not allowed so much exercise and their hours of school are shortened. Many sanitarium, however, are doing what is really preventorium work.

*Sanitarium open-air schools in England.*—The sanitarium schools for children in England have already been described.<sup>1</sup>

Dr. Esther Carling, medical superintendent of the Kingwood and Maitland Sanitarium at Peppard Common, Oxon, England, makes

FIG. 94.—Children's cottage at Chicago Municipal Tuberculosis Sanitarium. Provides for 25 children. The school room is at the right end of the building.

the following suggestions on general arrangements for sanitarium schools:

First, it is well to provide for all classes of tuberculosis at the sanitarium, taking care that separate blocks be provided for the surgical cases and that the incipient and advanced cases of pulmonary tuberculosis be separated. This will mean separate wings or blocks for the following groups: (a) Little children; (b) sick children; (c) larger boys; (d) larger girls; (e) isolation or observation cases; (f) surgical cases, if included.

Second, a separate room must be provided for the schoolroom, if possible, preferably adjoining an open-sided central hall, which should be empty of all furniture save a piano and some simple apparatus for remedial exercises. This hall can be used for assemblies and for drill and play in wet weather. All "sitting-still" lessons can thus be followed by a march around the hall or a few minutes' drill and remedial exercises.

Third, the provision of simple apparatus for Swedish remedial exercises is essential for a sanitarium school. Many of the children are underdeveloped

<sup>1</sup> See p. 139.

and others have the beginnings of malformations, which careful remedial exercises may completely correct.

Fourth, a dental room or a surgery in which dentistry can be comfortably and effectively carried on is also essential. Any treatment of tuberculosis in children that does not make provision for dental care is faulty. It often happens that it is hard to get to a good dentist from a country sanitarium.

Fifth, there is less objection to a big ward for children than for adults, provided that about one-half of the children in each section are accommodated in small rooms of one, two, or three beds. This may be desirable for the sake of discipline or on account of noisy sleep or coughing; and small rooms also allow

FIG. 95.—Ridge Farm Preventorium, Deerfield, Ill.

a certain amount of adjustment of the sexes, if there happen to be, for instance, more boys than girls in the institution.

Sixth, room should be left for children's gardens, and these will be better worked if each plat has a path around it and if a stand-pipe for water is available nearby.

Seventh, while the number of children that are to be provided for must vary with the needs of the locality, the essential thing is that the sanitarium school should be so arranged that every individual child should be known fully and personally to the responsible officers. A minimum of 60 and a maximum of 100 children is the best number to provide for.<sup>1</sup>

*New York Municipal Sanitarium Open-Air School.*—Reports have been received from 25 sanitarium and hospital schools in the United

<sup>1</sup> Carling, Dr. Esther. "Construction and Management of a Sanitarium School for Children." In *Yearbook of Open-Air Schools and Children's Sanitaria*. Edited by T. N. Kelynack, M. D. Pp. 16-26.

States. One of the largest of these schools is that connected with the New York City Municipal Sanitarium, located at Otisville, N. Y. In 1913, at the request of Dr. Lederle, health commissioner of the city of New York, and upon the recommendation of the board of superintendents, the Board of Education of New York authorized the organization of classes at the Municipal Sanitarium for the benefit of children of school age who came under the care of the above-named institution.

These classes were made an annex to Public School No. 14, Manhattan, and began work on November 3, 1913. For two years previous the sanitarium authorities had been attempting to conduct classes for the children who were patients at the institution, but they had been dissatisfied with the kind of work which was accomplished, and felt that it would be decidedly more advantageous to have the work done under the supervision of the educational authorities of the city.

The aim of the school work is to enable these children who are forced by ill health to leave the city temporarily to resume their school work without loss of time or standing upon their return to the city. The curriculum, therefore, is similar to that in use in the city schools, but modified, wherever possible, to meet the special needs of the individual child. Upon discharge from the institution each child receives a transfer card which entitles him or her to admission to any public school in the city in which there is a grade corresponding to the one indicated on the card.

In 1914 there were 92 boys and girls, ranging between the ages of 5 and 15 in the Otisville Sanitarium School. Two school sessions are held daily, from 9.30 to 11.30 in the morning and from 2 to 4 in the afternoon.

*Other cities.*—Louisville, Ky., Detroit and Grand Rapids, Mich., Boston, Mass., and Cincinnati, Ohio, have also successful open-air schools for tuberculous children in municipal sanitarium. Chicago has provided for 250 children in the beautiful cottages of the municipal sanitarium opened in 1915.

*Open-air schools at State sanitarium.*—The policy of State sanitarium with regard to open-air schools is in process of development. The experience of Massachusetts in this regard is therefore significant. Previous to 1910 Massachusetts had no sanitarium provision for tuberculous children under 14 years of age. In that year sanitarium were opened at North Reading, Lakeville, and Reading, and a few applications were made at each place for the admission of young children having pulmonary tuberculosis. They were admitted and cared for, but it was considered undesirable to have them in close association with the adult patients and it was found much easier to



Westfield was chosen, and under the superintendency of Dr. Henry D. Chadwick, the school has rapidly increased in numbers and efficiency. In May, 1914, Dr. Chadwick wrote:

We have about 125 children at the present time, all being sent to the sanitarium because of pulmonary tuberculosis. The school work is secondary to the sanitarium treatment. The pupils have fewer rises of temperature, and gain weight more steadily during the period when school is in session than during vacations. Each child attends but one session of two and one-half hours daily. The school is graded according to public-school standards.

The four higher grades attend the morning session, and the first four grades the afternoon session. In addition to this a few children are continuing some of their high-school studies.

Because they live in the open air so much and have widely opened windows in the schoolroom, they are always eager and alert and can accomplish in one session the average day's work done in the public school.

Many of the children are backward in their studies because illness has prevented regular attendance at school before coming here.

After a thorough review of their previous school work they are not only ready to go on easily with their proper grade, but in many instances have been able to go into an advanced class.

Iowa, Maryland, Missouri, New Jersey, New York, and Wisconsin are among the States which conduct open-air schools at State sanitariums for tuberculosis.

#### HOSPITAL OPEN-AIR SCHOOLS.

A hospital is an institution in which medical treatment is given to the sick and injured. A hospital open-air school is planned for those children who are bed cases or who require individual nursing care. Most cases of surgical tuberculosis are cared for in hospitals.

The earliest and possibly the best illustration of such a school in this country is to be found in the Sea Breeze Hospital for the treatment of surgical tuberculosis, maintained at Coney Island by the New York Association for Improving the Condition of the Poor.

The hospital was founded in 1904 "to demonstrate for American hospitals, and more especially for American city and State hospitals, the healing power of outdoor treatment in the salt air for nonpulmonary forms of tuberculosis in children." Such methods had long been familiar to European physicians. As far back as 1791 England had built the first permanent seaside hospital at Margate. Italy, France, Belgium, Holland, Germany, Austria, Denmark, Norway, Sweden, Russia, Portugal, and Spain have all made similar provision for their tuberculous children.

The hospital was planned to be in operation during the summer months only, but even in that short period of time its success was so marked that it was decided to continue the treatment through the winter. The New York City Board of Education assigned a teacher,

and an ungraded school was conducted for the children, at first mainly as a therapeutic measure.

A small frame schoolhouse was built and equipped with specially designed desks and chairs which could be adapted to the comfort of the deformed and crippled pupils, most of whom were in casts or on crutches. Blackboards and school equipment were provided by the board of education. No heat is furnished to the schoolroom, but the children are so accustomed to sleeping and living out-of-doors at the hospital that they seldom mind the winter winds. A room has now been fitted up in the hospital building for the kindergartners.

It is hard to raise flowers and vegetables on the sandy soil by the schoolhouse, but perseverance works wonders, and the tiny plat where blossoms do persist is one of the chief joys of the children. Manual work and gardening occupy a large part of the day. There are frequent recesses, and at intervals during the forenoon the teacher goes to the long verandas where other little patients are strapped on boards or held immovable in casts, and gives them 5 or 10 minute lessons in reading, history, or oral English.

It is surprising how much can be accomplished in so short a time. The patients are mostly young children or those who have never received any schooling at all prior to their admission to the hospital. Some of them have now been carried as high as the fifth or sixth grade, and do very satisfactory work.

*The Massachusetts State Hospital School.*—The Massachusetts State Hospital School for the care and education of the crippled and deformed children of the Commonwealth, at Canton, has been practically a residential open-air school since its opening on December 1, 1907. The school occupies 65 acres of rolling land on the shore of a beautiful inland lake. It has about 18 acres of woodland. The dormitories are really out-door pavilions, only closed and heated for a short time while the children are rising in the morning or retiring at night. The classrooms and dining rooms are always open to the air.

Three hundred children are cared for, and the percentage of sickness from tonsillitis, croup, catarrhal colds, and other foul-air diseases, usually so high in institutions of this sort, has been negligible, a fact which the superintendent attributes entirely to the open-air conditions.

Most of the pupils are able to attend school on an average of an hour and a half daily. They receive instruction in kindergarten and first-grade work, reading, writing, spelling, arithmetic, geography, history, language, drawing, nature studies, and music, according to their individual requirements, but special emphasis is laid upon the practical work which they are taught to do. The girls, in addition to receiving carefully graded instruction in sewing and cooking, do practically all the housework of the institution. The

boys have been taught to assist with the construction of new buildings, to do most of the farm work, and to assist the engineer in planning the plumbing and lighting of the buildings.

Sloyd work is given on three days of every week with printing and cobbling lessons in connection with it. Among the children trained in industrial work, a number have found steady work outside. One permanently crippled boy who was instructed in the engine room found a good place as a first-class licensed fireman, with a prospect of advancement.

The study of forestry is also carried on with a view toward fitting the boys for future self-support.

Open-air schools for children with surgical tuberculosis are carried on at the James L. Kernan Hospital and School for Crippled Children at Baltimore, Md., and at the Chicago School for Crippled Children.

*Home Hospital, New York City.*—On March 18, 1912, the New York Association for Improving the Condition of the Poor inaugurated an important experiment in the combined home and hospital treatment of families in which tuberculosis was one cause of dependency. The association leased 24 apartments in the East River Homes, a model tenement building at Seventy-eighth Street and John Jay Park, New York City. The families who were moved into the apartments had already been receiving aid from the association, and each had one or more tuberculous members.

The association attempted to demonstrate the medical and economic practicability of treating as a unit a family in poverty and afflicted with tuberculosis. The results obtained during the first year were so satisfactory that on November 24, 1913, a second section of 24 apartments was leased, enlarging the hospital to 40 families with 120 patients. An operating room and a dental clinic have been established. Seventy-four families, containing 361 individuals, of whom 226 had tuberculosis, received medical care between March 18, 1912, and January 1, 1914. Thirty-five of the families have at the time of writing left the hospital; 23 of them sufficiently improved to bring about social and economic rehabilitation.

Since the association has realized that the great problem in the fight against tuberculosis is to prevent infection of new victims, the children are receiving the greatest attention. An intensive study of 196 Home Hospital children showed that about one-third of them already had tuberculosis and approximately another third were probably infected. At the Home Hospital the children are practically isolated from the infected adults. The food for the whole family is carefully planned by a trained dietitian, and the children receive extra nourishment twice daily. Two open-air schoolrooms and an

open-air kindergarten room have been constructed on the roof of the tenement building.

Teachers were furnished by the New York City Board of Education. At their admission over 75 per cent of the children were in very bad physical condition, most of them with such pathological symptoms as enlarged tonsils, adenoids, glands, etc. With defects corrected and their life in the open air, they have made remarkable improvement. But most important from the standpoint of economics the Home Hospital has proved that its methods of treating combined poverty and tuberculosis cost less than the plan of caring for the sick in hospitals or sanatoria, plus the relief necessary to maintain the remaining members of the family either in their homes or in institutions.

Preventorium care for children costs about 80 cents per day for each child. Care at such sanatoria as Ray Brook and Otisville costs \$1.28 to \$1.36 a day. At the Home Hospital the per diem per capita cost of supervision and administration was reduced to 18.3 cents, and the average cost per day per person for all expenses is about 66 cents.

#### VOCATIONAL TRAINING FOR TUBERCULOUS CHILDREN.

An institution which cares for children handicapped in their efforts at self-support by noticeable deformity or irremediable defects usually makes some effort at teaching trades. Little has as yet been done in this line, however, for the children equally, but less obviously, handicapped by physical weakness and susceptibility to infection.

Dr. Allan Warner, school medical officer at Leicester, England, suggests the establishment of an open-air agricultural college and labor exchange in connection with residential open-air schools. Instruction would include courses in stock raising, chemistry of soils, rotation of crops, tending of orchards, and the like. Forestry, landscape gardening, and dairy farming suggest themselves at once as suitable out-door occupations which offer prospects of a good livelihood.

It may be necessary to face squarely the proposition that certain children will never be able to endure the confinement of office or mercantile employment without constant danger of relapse and to plan their education along other lines than the ordinary academic work of the grades. The best instructions should be secured with a view to placing the whole undertaking on a vocational basis. Such an institution as an open-air agricultural college should within a few years become largely self-supporting by raising fine stock and food products, to say nothing of its social value.



Whether or not training of this kind is immediately available, no child of working age should be permitted to leave a residential open-air school to seek employment without having received definite advice as to suitable occupations for one in his condition. If there is a vocational guidance bureau of any sort in the community, he should be urged to avail himself of its guidance.

All children should be carefully watched during the first years of their working life to guard against the danger of relapse. They should return to the dispensaries of the school for frequent reexaminations until their health gives evidence of ability to withstand the strain of continued work.

English schools have developed what they call "voluntary after-care committees," which keep in touch with such working children, try to secure them suitable employment, see that their home life is kept up to standard, urge them to return for examination, and make a written report to the school yearly or oftener on their condition.

*Qualifications of Teacher for Institutional School.*—In no other form of open-air school work does more depend upon the personality of the teacher than in the institutional school. The pupils are isolated from normal family life and find themselves in an environment totally different from anything in their previous experience. They are frequently undergoing much physical suffering. Some of them have only unpleasant recollections of school, because of irregular attendance, difficulty in learning, possible ridicule of schoolmates, and physical discomfort. Many of them have never attended school at all. Their first attitude toward things educational is apt to be unfriendly. To win their confidence and awaken their interest requires patience and tact of a high order.

The teacher must, furthermore, hold all her plans of work subject to change at physician's orders; she must learn to expect frequent shifts in membership and adjust herself cheerfully to unexpected emergencies; above all she must have a wholesome sense of humor, abounding physical health, and an optimism that refuses to be shaken. Her training should be adequate along academic lines and should include special preparation in manual work, hygiene, and nature study.

If possible, the teacher should live at the institution. She will have a clearer understanding of the real condition of her charges if she mingles with them out of school hours, and there will be more unity of action with nurses and physicians.

*Essentials for the Hospital or Sanitarium School.*—Wherever the work of the hospital sanitarium school has been successfully carried out in this country or abroad, certain facts have characterized the management.

1. There has always been a sufficient number of children to justify the employment of a teacher at a stated salary for specified hours of work.

2. The teacher has held a certificate from the local or State board of examiners and has worked under some kind of supervision by a higher educational authority.

3. In most cases it has been considered highly desirable, if not essential, that the teacher be able to give instruction in elementary manual training, and that she be capable of leading in nature study.

4. Since all ages and grades are apt to be represented at the sanitarium school, the teacher has been expected to qualify to instruct any grade between the kindergarten and the high school.

5. Some school equipment has been provided—in most cases desks or chairs, blackboards, books, etc.

6. There has been some fixed place for hearing the recitations, removed from disturbance by other patients. Various types of open-air structures, built or remodeled for this purpose, are illustrated in this chapter.

7. An attempt has been made to work out a curriculum which approximates that of the local school systems represented by the patients.

#### VACATION SCHOOLS.

The vacation period has for many years been a problem of peculiar interest, especially to social workers and to teachers. It has increased in importance with the development of industrial centers and the gathering of people into large cities. The "street and alley time" of boys and girls becomes increasingly important on the physical and moral side, as well as on the intellectual. With the end of the school year school buildings and grounds have closed and the children have been turned loose to the uncertain vicissitudes of the streets. Especial attention has been called to this problem through the rapidly multiplying juvenile courts, whose records show increased activity in the months when school is closed.

Among the most effective agencies that have been developed to help meet this need are the vacation schools and country outing work. The education committee of the London County Council in 1912 made a report on vacation schools and organized play. The report states:

The first vacation experiment appears to have been made in Switzerland in 1878 by a clergyman named Bion, who took a number of children to the Appenzeller Highlands during the holidays. In 1883 this experiment was followed by the organization of health-vacation colonies at Amsterdam. In 1888 the first summer colony for primary school children in Russia was founded by Miss Orloff. The enterprise rapidly developed under the auspices of the Muscovite society. The type of colony was modeled on one of those of the

Swiss, and with the introduction in 1890 by the Moscow Educational Council of medical control in the ordinary day schools, the school doctors were asked to advise and assist in the scheme. \* \* \* During the 23 years that the Muscovite association has been in existence 572 colonies have been founded, and 11,861 children have been sent to them, all of whom have gained in physical, mental, and moral well-being. It is estimated that 44 per cent of the children sent each year have never been out of Moscow before.

In 1896 the vacation-school movement began in Chicago, Ill., and Cambridge, Mass., and in 1898 in New York. The first vacation-school experiment in England was made in the summer of 1902. Through the energy and enterprise of Mrs. Humphrey Ward a vacation school was established at Passmore Edwards Settlement.

FIG. 97.—Country outings for city school children.

In June, 1905, the education committee decided that the practice of affording facilities for the establishment of vacation schools should be continued and that the education committee should submit proposals showing in detail the facilities it desired the council should afford for the establishment of not more than 12 such schools.

The vacation schools, both in European countries and in the United States, have become useful both for health promotion and conservation and suggestive as educational agencies. In Chicago and other American cities applications from children for admission are always in excess of the capacity of such schools. Perhaps the time will come when the schools will accept more responsibility for

the vacation period and have extensions in the parks and in the country.

The country-outing movement is closely akin to the vacation school. In nearly all the large cities of the United States and in cities abroad the summer season sees great activity in taking children off the streets and into the country to camps and to country homes. In the main it is a health and recreation movement. However, it has a marked educational value. The games and walks, the opportunities for observation and for becoming acquainted with a new set of surroundings and circumstances, the association with teachers and recreation leaders, make the outing work very beneficial from the educational point of view. Children come back from the country refreshed and invigorated. Outings are not restricted to debilitated children, but the aim is usually to take those who live in the most congested parts of the cities and from homes where there is a limited number of rooms and restricted income.

In all this work it is interesting to note how the education possibilities come to the front. Just as the teaching profession is becoming more impressed with the necessity of emphasizing health work, so those who started from the health side quickly become impressed with the desirability of affording appropriate educational facilities. It is the ultimate purpose of the open-air school to bring both of these activities to the most effective service of the children.

## Chapter XII.

### EDUCATIONAL ORGANIZATION AND CURRICULA OF OPEN-AIR SCHOOLS.

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"More air! More air! More air in the schoolroom; more air in the lungs; more air in the curriculum!" was the concluding statement of a brilliant address on open-air schools delivered by Dr. Albert Mathieu at the third international congress on school hygiene held in London in 1907.

The fervent reception of this sentiment by the large audience gave convincing evidence that "more air in the curriculum" especially appeals to teachers.

The open-air school and the ungraded classes which have been introduced into the schools in recent years have given abundant proof that the interest, enthusiasm, and hearty support of teachers are readily enlisted in educational work which makes for better care of the individual child.

Advocates of the open-air school movement do not overlook the value and necessity of carefully planned curricula. The indoor public schools have the task of providing educational facilities for all the children. Grading, system, large classes, and mass dealing are necessities of the present situation.

The open-air school idea, however, is a plea for more definite knowledge about the needs and possibilities of individual children, and for an elasticity and sensitiveness on the part of the school management that will insure each child more certainly and in a greater degree the care and attention he needs. There are few traditions in this work to hamper a teacher or to impose standards which she feels she must meet or be counted a failure. She has more freedom, more chance for originality in striving for results. Open-air-school work ought not to crystallize into a rigid system or routine, because its programs and activities should always be based on a thorough knowledge of individual children's capacities and needs.

*Length of session.*—Theoretically the length of the daily session in the open-air school corresponds to that in the public school; practically, it is somewhat longer, especially when daily cold-shower baths are given in the morning. The children arrive from 8 o'clock to 8.30, prepare for their bath, dress again, and put on the extra wraps or costumes provided for the open air. By 9 o'clock they

are ready for the schoolroom, where they remain until noon, but the session is broken by frequent exercises between recitations and often by a morning lunch at 10 or 10.30. Sometime during the forenoon a nurse comes to inspect the classes, to take temperatures, and to call certain children before the physician for special examination. Following the noon dinner, an hour is given to rest. The school period closes at 3 or 3.30, but the children have still to remove their school wraps and prepare to go home. During the winter months it is often 15 or 20 minutes after the close of school before they are ready for the street. It is estimated that the actual length of time given to recitation is shortened from an hour and a half to two hours in most open-air schools, but the children really spend a longer time at the school because of the unusual features of the daily program.

Only two or three open-air schools in this country are in session six days a week. When this is true, Saturday is usually given over to manual training, gardening, or other forms of hand work, and is often selected as the day for weekly weighing. Many persons feel that all open-air schools should be continued throughout the entire week, since children almost always lose in weight after two days at home. On the other hand, there might be difficulty in securing the consent of parents to the admission of children if they felt that the children would be away from home also on Saturday.

There seems to be no question but that it would be advisable to continue open-air schools through the summer vacation, except for such children as come from good homes and are assured of excellent care through the summer months. The work can be varied, with greater emphasis placed on the outdoor activities, and both physically and mentally the pupil will be better off than if he spent July and August at home or on the street. This is particularly true when the location of the school makes it possible to do considerable garden work and to have access to woods and meadows.

*Size of class.*—The regulations of the English board of education require that no more than 20 children shall be assigned to 1 teacher in an open-air school. The custom in this country has been to hold the number between 25 and 30, with 25 preferred. In towns where only one open-air school is conducted, or in cities where fresh-air classes are few and far between, it may happen that every one of the eight grades is represented among the 25 pupils. Under such circumstances flexibility of grading becomes a necessity, and the nonessentials are quickly eliminated from the curriculum. It will usually be true that such a group of children can be classified into three main divisions for purposes of study and recitation, rather than attempting to follow the ordinary grade distinctions. Promotion then becomes a very informal affair, based on mastery of a

subject rather than on time spent in a grade, and the bugbear of final examinations generally disappears.

It must be remembered, however, that the children who enter an open-air school are there only temporarily, and that on discharge they must return to the ordinary school to continue their studies in competition with children who have received the full training of the grammar grades. Parents sometimes object to letting a bright and ambitious child enter the open-air school for fear that he will

FIG. 98.—Breathing exercises at the Szombathely, Hungary, Open-air School.

lose valuable training and be at a disadvantage on his return to the public school.

It is true that the length of time spent on each recitation is considerably shortened and that some subjects, such as drawing and music, may be dropped from the curriculum, but the high-school records of the pupils who have graduated from the Elizabeth McCormick Open-air Schools, after some years of attendance under the modified school program, show that they more than hold their own in competition with schoolmates who have had the formal training of the grammar schools. This is also the testimony from foreign schools.

Parents need not fear loss of rank for their children. Rather they will find such an increase in ability to concentrate and in the power of sustained attention that an advanced study becomes easier instead of more difficult. A 10-minute recitation, with the child's mind really

concentrated on the subject at hand, is worth more than 30 minutes of desultory attention.

*Number of grades to teacher.*—The number of grades which a teacher can handle successfully will depend upon her ability and previous experience, and upon the number of children whom she is to manage. Some very successful schools have been conducted after the same fashion as the old-time country school, with the full eight grades under one teacher. The system of grouping referred to above will provide a much more satisfactory arrangement, however, and it is advisable, when possible, to plan for at least 50 children with

FIG. 99.—Goats and chickens are important members of the school family at the Bowring House Country School, Roby, Liverpool, England.

2 teachers in each open-air center, so that 1 teacher will not need to plan her work for more than four grades.

One feature which adds greatly to the difficulty of the work is the frequency with which children are transferred before the end of a school session. In a constantly shifting group in an ungraded school the teacher must plan her work skillfully if she is to do full justice to everyone. The tendency now is to retain open-air school pupils longer than was at first the custom, since it has been proved that temporary gains may often be lost by too hasty transfer to a closed schoolroom. The records of children who have been more than one year in an open-air class often show a decided improvement in the second year over the work of the first.

*Daily Program.*—No standard daily program can be worked out which will be of service to all teachers alike, since each must plan



her day's work according to her own special group of children and hold it ready for change when new pupils are admitted. The Boston School Committee, however, has made certain suggestions to the teachers of its open-air classes, which are of general significance and which are reproduced in full on page 258 in the Appendix. It is pointed out that the proper alternation of the periods of work with the periods of rest is the principle first to be considered in planning the daily program for an open-air school.

Arithmetic should be taught at periods following rest. The period suggested is between 9 and 10 o'clock in the morning. Mental arithmetic should not follow a lesson in history, writing, drawing, or sewing. Writing or drawing should be taught by means of large muscular movements, rather than through the sense of sight. Short lessons are better than long.

Physical exercises should be frequently given, but the possibility of fatigue should not be overlooked, and the physician should pass on the amount of exercise to be allowed each child. The time allowance for each subject should be so varied by the teacher that the pupils may have frequent periods of rest and relaxation. Subjects and exercises may be combined in such a way that the educational value is increased, rather than diminished, by the shorter period.

A typical daily program for one of the Boston fresh-air classes is given below. In studying this program it must be remembered that the classes are for physically debilitated children and not for tuberculous children. Thirty-six pupils are assigned to each class; no rest period is given; and the children go home for the noon luncheon. The daily program combines the requirements of the school committee, with the special requirements suggested above for open-air classes.

*Typical daily program.*

[From the Boston annual school report, 1913.]

Time.	Subject.	Grades.
9.00 to 9.10.....	Opening exercise.....	All.
9.10 to 9.20.....	Personal hygiene.....	Do.
	Medical inspection.....	Do.
	Hygiene and physiology teaching.....	Do.
9.20 to 10.00.....	Arithmetic (as outlined above).....	Do.
10.00 to 10.10.....	Music.....	Do.
10.10 to 10.30.....	Luncheon.....	Do.
10.30 to 10.50.....	Recess.....	
10.50 to 11.15.....	Elementary science, manual training, or household science.....	Do.
11.15 to 11.30.....	Spoken English.....	Do.
	Reading and literature.....	Do.
11.30 to 11.40.....	Physical training.....	Do.
11.40 to 12.00.....	Written English.....	Do.
12.00 to 1.30.....	Home.....	Do.
1.30 to 1.40.....	Rest—relaxation—story-telling.....	I-II.
1.30 to 1.50.....	Sight arithmetic.....	IV-V.
1.50 to 2.00.....	Physical training.....	All.
2.00 to 2.20.....	Drawing.....	Do.
2.30 to 3.30.....	Free play—recess.....	I-III.
2.30 to 3.00.....	Geography.....	IV, etc.
3.00 to 3.10.....	Physical training <sup>1</sup> .....	Do.
3.10 to 3.30.....	Oral arithmetic <sup>1</sup> .....	Do.

<sup>1</sup> Alternate days with manual training.

The program in Utica, N. Y., shows the possibility of grouping when a large number of grades are included in the open-air school. Apparently the two divisions of the first grade might also have been combined.

## PROGRAM, UTICA, N. Y.

- 9.00 to 9.20 Morning exercises.  
 9.20 to 9.40 D-E, reading; C, study reading; B, study reading; A, study geography.  
 9.40 to 9.50 Physical exercises.  
 9.50 to 10.10 A, geography; B, copy work; C, written number work; D, busy work; E, busy work.

FIG. 100.—Children on a school journey halting for the noonday lunch, France.

- 10.10 to 10.30 B, reading; A, written work; C, busy work; D, written number work; E, board work.  
 10.30 to 10.40 Recess.  
 10.40 to 11.00 Reading, C-E; A, B, and C, written spelling; D, busy work.  
 11.00 to 11.20 Oral spelling, A, B, and C; busy work, D-E.  
 11.20 to 11.30 Play time.  
 11.30 to 11.45 Arithmetic, C-D; written arithmetic, A-B; busy work, E.  
 11.45 to 12.00 Music.  
 12.00 to 12.30 Dinner.  
 12.30 to 1.30 Rest.  
 1.30 to 1.35 Chairs put away.  
 1.35 to 2.00 Language.  
 2.00 to 2.20 A-B, history reading; copy work, C; board work number, D; busy work, E.  
 2.20 to 2.30 Dismissal.

The St. Louis daily program indicates a possible arrangement when six grades are included in the school:

DAILY PROGRAM—OPEN-AIR SCHOOL, ST. LOUIS.<sup>1</sup>

8.00	Arrive at school.		
8.30	Baths.	11.45	Arithmetic, I, II, III.
8.45	Lunch.	12.30	Dinner; handwork.
9.15	School (reading, I, II, III, IV, V Grades).	1.30	Rest, I, II, III; penmanship, IV, V.
10.15	Language, I, II, III, IV, V.	2.00	Arithmetic, IV, V.
11.00	Recreation; dancing.	3.00	Geography, IV, V.
11.25	Rest, IV, V; penmanship, I, II, III.	3.20	Lunch.
		3.30	Go home.

*Qualifications of teacher.*—The teacher of an open-air class should be well trained in the ordinary grammar school subjects and should have special preparation in manual training and nature study. She must be adaptable, alert, genuinely interested in the health of her pupils, and alive to the possibilities of her position. The open-air school should not be considered a place of refuge for nervously exhausted women, or for arrested cases of tuberculosis, unless a physician's certificate has been obtained, showing that the teacher is fully capable of handling the heavy work of an ungraded class. Women with throat trouble or with Bright's disease should not undertake the work. Teachers of experience in open-air work agree in saying that they are more free from fatigue and backache at the close of the day than they have ever been in closed school work, since the tension of discipline is greatly reduced and the nervous strain of constantly forcing tired children to school tasks is done away with.

WHAT A TEACHER SHOULD OBSERVE FROM THE HEALTH SIDE.

1. The adjustment of windows and screens.
2. That no child is unduly exposed to drafts.
3. That children are properly clad.
  - (a) See that heavy sweaters, Eskimo suits, coats, and heavy underwear are not worn in mild weather.
  - (b) See that children are sufficiently clad when weather suddenly turns cold.
  - (c) Know if children have wet feet.
4. Which children have had glasses prescribed and whether they wear them.
5. Which children fail to hear readily, and especially failure of hearing on part of children who usually hear well.
6. The development of acute colds and nasal discharge.
7. Development of signs of nervousness and irritable disposition.
8. Development of listlessness and inability to concentrate.
9. Failure of interest in school work.

<sup>1</sup> Two years' work by the St. Louis Society for the Relief and Prevention of Tuberculosis, 1910-11.

10. Increased interest in school work, and know whether it is due to elevation of temperature or general improvement of physical condition.
11. If child's hands are cold, and be watchful for evidence of chilling. Children often suffer without complaint.
12. Evidence of weariness in the morning, and learn if due to late hours at home.
13. Cleanliness.
14. Personal habits of children.
15. Restlessness during rest period on part of children who usually are quiet.
16. Extreme lassitude and inability to waken.
17. Evidence of failing appetite.
18. That on returning from bath the hair is thoroughly dry and that the children are not permitted to return to schoolroom too soon after bath.

FIG. 101.—Breathing exercises on a wooden platform adjoining the school tent, Springfield, Mass.

*Pay of teacher.*—Because of the unusual features of the open-air school work, indicated above, fresh-air classes are frequently listed among the so-called special classes, and the teacher receives additional pay. In New York City, Brooklyn, and other eastern cities this additional pay amounts to \$100 a year.

*Curricula.*—The curricula of American open-air schools, in contrast with those of the foreign schools, have adhered more nearly to the indoor school curricula. This has been due largely to their physical nearness to the regular public schools. It is difficult for a teacher in an open-window room to get away from the regulation program. Removal to a roof or to a separate building seems to release her

mind from the rigidity sometimes unconsciously acquired from the daily sight of four calcimined walls and five rows of immovable desks. If the school can be so situated that a partnership with nature is possible, it is the best guarantee against monotony in the curriculum.

A kindergarten teacher in a Sacramento, Cal., open-air school says:

In the open-air kindergarten we find that in place of the old-time program, the week's thought and the changes in introducing morning talks come to us unsought rather than by our seeking. We seem to be in the very midst of nature's calls, for birds, butterflies, bees, caterpillars, and spiders appear on our window ledge, or pass through the room. Songs or stories are always suggested *by* the children *from* their environment.

Under such circumstances it is possible to allow the children more freedom of self-expression, and to cultivate their ability for doing and making.

The English reports emphasize the ease with which the elementary studies can be worked out along motor and sensory lines, and the foreign schools have carried this development much further than has yet been done in America, except perhaps at a few private open-air schools. This is partly due to the organization of the elementary schools in England, which gives much freedom to the headmaster of each school in planning the course of study. Teachers of open-air schools in England have been practically released from all restrictions as to curricula, and have been given a free rein in working out their own theories, provided only that the work is approved by the official inspector of the board of education.

*Curriculum of Shooter's Hill open-air school.*—Thus at the Shooter's Hill School near London, the headmaster has made manual work, nature study, and gardening the basis of his whole curriculum. The boys fenced in the garden, built the tool house and hutches for pets, boarded up an exposed end of the schoolroom, made the wooden slats for foot rests, constructed paths and a drainage system for the school garden, and even fitted up a small ornamental pond and sun dial.

Arithmetic, drawing, elementary chemistry, and botany were correlated with the actual manual work. The girls helped with the computations and with the lighter work, and had sewing in addition.

A most interesting feature of the course of study is the method of teaching geography. The school overlooks the river Thames and its shipping. The steamship companies whose boats dock at the London wharfs send to the school descriptions of the boats, their routes, and their cargoes. Soon the children learn to recognize the funnels, and it is a great event when an East Indian liner comes to dock. Geography becomes a living thing, with the whole world thus brought to the schoolroom door. In the same way history

lessons start with visits to the many places of historic interest within easy reach of the school. The complete course of study, which is full of suggestion for American teachers, is given below.

# SYLLABUS OF WORK, SHOOTERS HILL OPEN-AIR SCHOOL

## RECITATIONS.

Study and, where possible, learn—

### *Class I—*

Home Thoughts from Abroad (R. Browning).

My Heart Leaps Up (Wordsworth).

Lines Written in Early Spring (Wordsworth)

FIG. 102.—A school garden on a city roof, Horace Mann School, New York City.

To the Cuckoo (Wordsworth).

Reverie of Poor Susan (Wordsworth).

To a Butterfly (Wordsworth).

The World is Too Much with Us (Wordsworth).

A Wish (S. Rogers); Expostulation and Reply (Wordsworth).

### *Class II—*

The Royal George (Cowper); The Daisies (Sharman).

The Rainbow Fairies (Hadley); Morte d'Arthur (Tennyson).

Selections from Hiawatha (Longfellow).

The Village Blacksmith (Longfellow).

### *Class III—*

Baby Seed Song (Nesblitt); The Brown Thrush (Larson).

Daffydowndilly (Thompson); The Rabbits (Thompson).

How the Leaves Came Down (Mary Howitt).

Clouds (Sharman) ; selections from Hiawatha (Longfellow).

*Class IV—*

Song from Pippa Passes (Browning).

The Tree in Winter (Shakespeare) ; Little by Little.

Under the Greenwood Tree (Shakespeare).

What a Bird Thought ; Noontide (Anon.).

Baby Seed Song (Nesbitt) ; The Babes in the Wood (Anon.).

READING.

*Class I—*

Hereward the Wake ; Children of the New Forest ; Treasure Island ; Kent, Past and Present.

*Class II—*

Tales of the Court of King Arthur ; David Copperfield ; Highroads of History.

*Class III—*

Stories of Robin Hood ; Seaside and Wayside Readers ; Coral Island ; Highroads of History.

*Class IV—*

Chambers' Effective Readers ; The Golden Dawn Readers.

*General—*

Nature Tales and Myths ; Simple Greek Myths.

COMPOSITION AND DICTATION.

1. Correction of common mistakes in speech.
2. Oral composition, including the telling and acting of simple stories.
3. Written composition chiefly on subjects dealing with the nature and history lessons.

ARITHMETIC.

*Class I—*

1. Measurement of length (foot rule, tape measure, chain, and hoop), area (square, rectangle, triangle, and circle), volume (cube, rectangular prism), and weight.
2. Easy decimals and a general knowledge of the metric system, with special reference to the children's height and weight.
3. Simple proportion.
4. Exercises in profit and loss, and percentages based on the cultivation and sale of school-garden produce, and on other familiar transactions.
5. Angular measurements to aid in determining heights of trees, diameter of pond, etc. Use of protractors and simple theodolites.
6. Exercises in reading thermometer, barometer, rain gauge, and anemometer.

*Class II—*

1. Revision of multiplication tables, and simple fractions.
2. Revision of and more difficult examples in the compound rules.
3. Long division ; factors to be used where possible.
4. Measurement of length, weight, and volume ; plans and scales. The objects considered to be chiefly those found in the neighborhood or met with in the children's daily life.
5. Simple exercises in fractions, with practical examples.
6. Exercises in reading thermometer and barometer.

*Class III—*

1. Completion of multiplication table.
2. Four compound rules involving small sums of money; these to be explained by means of coins.
3. Simple ideas of the commonest weights and measures, i. e., those that are used in ordinary shopping.
4. Simple fractions, such as  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ,  $\frac{1}{16}$ ,  $\frac{1}{32}$ ; practical methods of obtaining them.
5. The clock face and how to read it; simple problems thereon.
6. Simple information respecting "degrees," to assist the children in reading the thermometer.

*Class IV—*

1. Composition of such numbers as 8, 10, 12, 14, 16, 18, 20.
2. Multiplication tables, i. e., 2, 3, 4, 5, and 6 times as far as 6.
3. The four simple rules, the numbers to be involved not to be greater than 100. Easy problems illustrated by free drawing.
4. Simple measurements dealing with inches, feet, and yards; practical work to be taken.
5. An elementary knowledge of money—bronze and silver coins. Some idea as to what articles can be purchased for  $\frac{1}{2}$ d., 1d., 6d., etc.
6. Simple fractions ( $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{8}$ ) taught by means of paper folding, clay modeling, etc. The clock face should also be introduced here.

N. B.—More difficult exercises may be used in the case of the more advanced children.

## GEOGRAPHY.

*General—*

Special stress is to be laid on the fact that the soil, climate, environment, and other natural features of a locality are the factors which usually determine and limit the occupations of the people occupying that locality. Raised maps are to be made to illustrate the geography lessons. The chief local geographical features should be taught to all classes.

*Class I—*

The eight chief lines of ocean-going steamers (Allan, Orient, P. & O., British India Steam Navigation Co., Union Castle, New Zealand Shipping Co., etc.) which are connected with the Albert and Victoria Docks; the cargoes which they take from and bring to London; general facts concerning the countries in which they have ports of call; distances covered and time taken by steamers; models of their respective funnels and flags.

*Class II—*

1. Chief physical features and industries of England and Wales.
2. The imaginary purchase of British goods used in connection with the buildings, apparatus, meals, etc., at the open-air schools, and the probable methods by means of which they were brought to the school site.

*Class III—*

1. Geography of Kent, Essex, and the Thames, with special reference to their industries.
2. Interesting details concerning Greenwich, Woolwich, Plumstead, Charlton, Erith, Eltham, Chislehurst, Epping Forest, Shooter's Hill, and Bostal Hill.

*Class IV—*

1. Story of Father Thames.
2. Type of district that would be chosen by a hunter, a shepherd, a miner, a farmer, and a fisherman; reasons for their choice.



3. Methods of obtaining food (eggs, fruit, corn, meat, etc.) and shelter (trees, caves, huts, etc.).
4. Physical features of the neighborhood.

#### HISTORY.

The improvement in the social and industrial life of the English people as illustrated by the history of Kent. The following points are to be dealt with:

1. The first inhabitants of Kent.
2. Roman associations; roads, camps, and antiquities. Julius Caesar.

FIG. 103.—Computing height of trees at Uffculme Open-air School, Birmingham, England.

3. Saxon conquest of Kent. Introduction of Christianity—Coming of the Danes, and the beginning of the landlord system. Earl Godwin and Harold.
4. Norman invasion and Middle Ages, Domesday Book; Norman architecture; Lesnes Abbey; Thomas à Becket; Canterbury Pilgrims; King John's Palace at Eltham; Wat Tyler's Rebellion; Welhall and Sir Thomas Moore; Woolwich Dockyard.
5. Modern times; historical objects and men of Woolwich, e. g., Rotunda, Severndroog Castle, Gen. Gordon.

Where convenient, and especially in the younger classes, brief plays and tableaux should be introduced to illustrate various historical events.

The models to be made by the various classes are: British barrow, British hut, Roman camp, Saxon village, Norman castle, a part of Lesnes Abbey, St. Augustine's Cross, and an archery butt; ancient domestic and war implements should also be attempted.

## NATURE STUDY.

The nature work should deal with the animal and vegetable life found at or near the open-air school, and with the local climate and soils. The various "subjects" should not be isolated, but special stress should be laid upon the interdependence of plant and animal life, these again being influenced by the soil and climatic conditions. A selection may therefore be made from the following, according to the powers of the children and the prevailing season, etc.:

1. *Earth knowledge*.—Lessons on various rocks, e. g., clay, sand, gravel, flint, chalk, and granite; the types of scenery produced by these rocks.
2. *Weather observations*—
  - (1) Wind, rain, dew, hail, snow, and fog.
  - (2) Information concerning the barometer, thermometer, rain gauge, anemometer, and sundial.
  - (3) Clouds and cloud sketching.
  - (4) Elementary information concerning sun, moon, and stars.
3. *Plant and animal life*—
  - (1) Awakening in hedgerow and pond—seeds, buds, primrose, colts-foot, birds' nests, frog, dragon fly, etc. The local trees.
  - (2) *Summer's glory*.—Buttercup, daisy, grasses, rushes, rose, bee, wasp, butterfly, moth, ant, etc.
  - (3) *The season of rest*.—Evergreens, hibernation, etc. Some of the nature lessons will be taken in connection with the gardening, for which there is a separate syllabus.

## GARDENING.

1. *Soils*.—Heavy and light soils and their preparation for crops.
2. *Manures*.—Natural and artificial.
3. *Seeds*.—Preparation of seed bed and methods of sowing.
4. *Transplanting*.—When and how to transplant seedlings.
5. *How to prolong* the flowering stage of a plant.
6. *Fertilization* of flowers and setting of seed; culture of various fruits and vegetables.
7. *Garden operations*.—Watering, digging, double and bastard trenching; hoeing, its uses in clearing weeds and conserving water.
8. *An allotment*.—Its arrangement and care.
9. *In the choice* of plants care is taken to include those most useful in nature lessons.
10. *Exercises in profit and loss*, percentages, etc., based on garden produce. Digging and preparation of clay for pottery.
11. *Clay modeling*.

## MUSIC.

*Upper division*—

1. Breathing exercises.
2. Voice training. Exercises to oo, ah, oh, ay, ee.
3. Ear-training. Simple phrases consisting of four notes, time and tune combined.
4. Sight reading—
  - (a) Tonic sol-fa—time and tune combined.
  - (b) Staff—easy passages in keys C, F, G in 2/4, 3/4, and 4/4.

5. The modulator—the first flat and sharp keys.

6. Songs—

- (a) "Who is Sylvia?"
- (b) "I know a Bank."
- (c) "Oh Mistress Mine."
- (d) "On Wings of Song."
- (e) "The Ash Grove."
- (f) "Spring Song."
- (g) "Ye Banks and Braes."

*Lower Division—*

- 1. Breathing exercises.
- 2. Voice training—voice exercises to oo, oh, ah, ay, ee.
- 3. Ear training. Simple phrases consisting of three notes.
- 4. Sight reading—
  - (a) Tonic sol-fa time and tune combined.
  - (b) Staff—easy passages in Key C in 2/4, 3/4, and 4/4.
- 5. Songs—
  - (a) "Who is Sylvia?"
  - (b) R. L. Stevenson's Songs for little children.
  - (c) "Ye Banks and Braes."
  - (d) "The Ash Grove."
  - (e) "Spring Song."

#### HANDWORK.

*Boys and Girls—*

Modeling in plasticine.

Historical and geographical models.

Gardening, including clay modeling (see separate syllabus).

Simple repousse work in connection with light woodwork.

Weaving in cane, bast, or string (younger children).

Graduated exercises in paper, cardboard, and wood connected with stencilling, etc.

*Girls only—*

Needlework (see separate syllabus).

Knitting.

*Boys only—*

Simple exercises in fretwork and wood carving (class 3).

Ordinary woodwork, such as the making of easy models (younger boys) or wind screen, tool shed (elder boys).

Metal work (zinc, tin, brass).

Rustic woodwork (elder boys).

#### DRAWING.

- 1. Rough sketches to illustrate various lessons.
- 2. Water color, pencil, crayon, and chalk work, chiefly to illustrate the nature lessons.
- 3. Simple design (elder children).
- 4. Imagination drawing correlated with literature and history.

#### NEEDLEWORK.

*Classes I and II—*

- 1. Patching—calico, print, and flannel.
- 2. Darning—stocking web, socks, and dresses.
- 3. Stitches used in plain needlework.

4. Patterns of useful garments (blouses, dresses, underclothing, pinafores, overalls) taught by means of paper folding.

Measuring material required and finding its cost.

5. Knitting—fancy stitches, skullcaps, etc.
6. Crocheting with cotton, wool, and macrame string.
7. Art needlework.

*Classes III and IV—*

1. Various stitches.
2. Making clothes for dolls; patterns for these garments to be taught by means of paper folding, and then cut out in material.

ORGANIZED GAMES.

*Boys—*

1. Singing games (younger boys).
2. Cricket, football, hockey, and rounders, according to the season of the year.

*Girls—*

1. Singing games.
2. Basket ball.
3. Skipping.

PHYSICAL EXERCISE.

1. Marching from Plum Lane School to the open-air school, and vice versa.
2. Breathing exercises (see separate syllabus).
3. Special exercises for cold weather.

*Bermerside Open-Air School, Halifax, England.*—The following program from the Bermerside Open-Air School, conducted by the city of Halifax for physically debilitated children, is typical of the arrangement of a day at the English schools:

TIME TABLE AND SYLLABUS.

- |                 |   |
|-----------------|---|
| 8.00 to 9.00.   | Breakfast.                                      |
| 9.00 to 9.20.   | Prayers, hymn, Scripture lesson.                |
| 9.20 to 9.30.   | Registration, personal inspection.              |
| 9.30 to 10.00.  | Nature lesson.                                  |
| 10.00 to 10.30. | Play, lunch.                                    |
| 10.30 to 10.45. | Singing.  |
| 10.45 to 12.00. | Manual work.                                    |
| 12.00 to 12.30. | Preparation for dinner, washing, setting table. |
| 12.30 to 1.30.  | Dinner.   |
| 1.30 to 3.30.   | Sleep.  |
| 3.30 to 4.00.   | Play, setting tea table.                        |
| 4.00 to 5.00.   | Tea.  |
| 5.00 to 5.45.   | Reading, telling stories.                       |
| 5.45 to 6.15.   | Games, impromptu plays, etc.                    |
| 6.15 to 6.45.   | Prayers, supper, home.                          |

English programs show a later hour of dismissal than is customary in the American schools. Most English schools have, following the rest period in the afternoon, a short school session, then tea, and outdoor work or play until 5.30 or 6 o'clock. The longer summer

evenings and the ease of transportation make this possible where it would not be feasible in the United States.

*Country Schools for City Children, England.*—Several English cities have established what they call “country schools for city children,” to which anemic and debilitated children are sent for summer vacations, lasting for a month or two, and where they receive a certain amount of instruction.

One of the most beautiful of these schools is the Bowring House Council School at Roby, near Liverpool. Here the curriculum is based entirely on nature study. The reading books used are appropriate to country life, and the poems studied relate to nature and its teachings. Stories are chosen with corresponding games and songs. The letters sent home weekly are descriptive of surroundings and new interest. One special feature of the school curriculum is the opportunity for self-expression, as shown in illustrated diaries and calendars which decorate the walls of the schoolroom, as well as drawings which result from the study of natural surroundings. This weekly diary, the mounted specimens, and the productions in clay and wood, are valuable results of enlightened observation during country rambles. A special feature is a course of lessons on the growth of trees, given weekly. Children learn to recognize the characteristics of various trees, by actual observation, and a friendly spirit of rivalry exists in the search for specimens of flora and fauna.

The boys learn to distinguish the birds by their various notes, and nests are found and carefully examined. Many opportunities thus arise for emphasizing the value of bird life. Butterflies, insects, frogs, and toads are studied. The children notice the blossoming of the shrubs and fruit trees, and the effect of a night's frost on those that are not sheltered. They make a note of the moon and its shape, night by night, for entry in their diary card.

The care of live stock, including chickens, ducks, goat, rabbits, dog, cat, canary, and two donkeys, proves a very popular occupation.

School gardens provide many of the vegetables used at the table. Visits are made to places of special interest in the neighborhood, as a quarry, brick works, a pottery plant, an old church, and a near-by farm.

The necessary household duties occupy the first part of the morning, each child having a special task to perform. Some are bed makers, others dust the rooms or peel potatoes, while some are engaged in washing up, and others in boot cleaning. All the little ones are kept very busy with the cleaning of spoons and the like. The girls also are taught to darn the stockings and mend the clothes and make the working aprons. The boys take part in the household work and darning, but practical woodwork interests them more.

Under direction they have made the houses and runs for the live stock.

Thrift is encouraged by banking the children's money on arrival, and by receiving frequent deposits. "Shopping days" are allowed twice a week, when money can be obtained from the bank, but careful account has to be kept of the expenditures.

In these and many other ways the community life of the school is related to the studies which are pursued.

*An English roof school.*—That the possibility of introducing novel ideas and methods into the curriculum does not depend wholly upon a country location for the school is shown by the following account of a school on an English roof.

The school equipment consists of a block of blank paper, pencil, water colors or pastel material for handwork, and the usual school textbooks. The teachers in charge keep diaries which list short lessons providing as much individual work as possible to the children, and in which are entered the amount of work done, and any other points worthy of notice.

First of all, in the morning the children walk about the roof, which commands an expanse of 40 miles from east to west. Such a wide prospect has a stimulating effect on children used to the restricted view of London streets. Facing the sunny hills to the east, they sing an opening hymn. Then, grouped in the sunshine, some count the railings, others tell how many more are on one side than on the other, and they check each other's results. They find out by actual measurements how many feet run are in the fence, how much iron in the bars, how much to paint so many feet, how many bricks in the chimney stacks, how long is the playground, how high, how many square feet are under cover, how much concrete to cover the floor, and so on. The older pupils find the cubical contents of pipes, the capacity of cisterns, the adequacy of gutters, and the calculation of height by the length of shadows. All are kept busy, with a foreman in charge of each group of six.

For the geography lesson they trace out the direction of the great roads with their borrowed telescopes, follow the river, get the position of the rising ground, and with their hands full of plasticine make a model of the landscape as they see it. From these models they make real maps, and so learn the relation of the map to the landscape. Older children may draw the prominent features of the prospect on one side of a glass slip and transfer this to paper, carefully naming all the outstanding features of the landscape, whether they be hilltop, factory shaft, or the distant wood.

The children learn about the clouds as they discover them in the sky, and draw them with pale washes of color or murky sepia. The kite that they have just flown over the railings, and the toy wind-mills that they have each made, tell them of the winds, the shifting

direction as the kite travels round, and the force as their tiny mills whirr in a flutter. They learn about light and shadow, keep a weather chart, and, most interesting of all, by noting and marking the moving shadows of stationary uprights they discover something of a world that is turning and moving.

For drawing, they go to large rough drawing boards, hung on the railings by rope loops, well papered to give a smooth surface. In the classroom it is hard to do any but tiny drawings, but out here they make life-size copies. The younger children love to draw on the playground floor, and they are allowed to do this with colored chalks. By the end of the open-air period the playground is a perfect mosaic of sketches.

History and English can always be acted, and the freedom of the open-air classes gives chances for working out little plays by the children.

*American open-air school curricula.*—Persons who have visited open-air schools both abroad and in this country feel that in many instances American teachers are simply doing indoor work out of doors, without much effort at new methods or means of expression as far as the teaching is concerned. However, more careful study of the work reveals in almost every instance a conscious groping for the same kind of freedom of curriculum which characterizes open-air schools in more favorable localities.

*School gardens.*—The educational value of the school garden has not been overlooked, even in schools where access to the soil is difficult, and, everywhere that the site has permitted, the garden has been made a special feature of the school. In Rochester a large space has been set aside for gardening. Aside from the preliminary preparation of the ground, all the work is done by the children under the direction of a woman gardener. The school is in session throughout the year. In the summer of 1914 they raised vegetables enough, with the exception of potatoes, to supply the table through the summer and fall. Tomatoes, turnips, carrots, peas, chard, string beans, and sweet corn flourished.

In South Manchester, Conn., where the school is in session during 10 months only, the children were encouraged to come on certain days during the summer for the garden lesson. A minister living near the school volunteered his services as instructor, and hired help to divide the land into plats, each 8 by 10 feet, and to apply the fertilizer. Each child was allowed one of these plats for his own ground, and what he raised he carried home. The same seeds were planted by all the children—radishes, lettuce, beets, onions, butter beans, and sweet corn. There were three community plats where the produce was raised for the use of the school. As a result of this work many of the children planted gardens at home.



The location of the Elizabeth McCormick Open-Air Schools, 1 and 2, on adjoining roofs of the Hull House in Chicago seemed to prohibit any work with gardens, but a near-by roof was found somewhat sheltered on three sides from prevailing winds, on which for the last three summers a very successful flower and vegetable garden has been maintained. Large boxes were carried to the roof and filled with soil. The vegetables were started under cold frames late in April and early in May. By June there were abundant flowers, and during the summer a small crop of vegetables was produced. Perhaps the achievement which gave the children the greatest pride was a harvest of 150 ears of sweet corn.

*School journeys.*—The school journey, as practiced in France, Switzerland, and other countries, is described elsewhere in this bulletin.<sup>1</sup> English work was started in 1896 by the Bellenden Road School, Peckham. The plan was to take some 30 or 50 boys by train to a convenient and inexpensive hotel, and use that as a center for daily expeditions. The idea spread slowly, but the board of education now recognizes for purposes of the attendance grant, "time occupied by visits during the school hours to places of educational value or interest, or by field work, or by rambles." (Code, art. 44B.) The London County Council allows teachers and classes to use its tramways at reduced rates, and where they can not be used the council pays part of the traveling expenses. A handbook on educational visits has been issued which lists places of interest, hours when they are open, subjects of educational interest, and special facilities. School journeys may last for a week or longer. The council makes a grant of not more than \$30 a week, or \$60 for a longer period, to pay for supplies, teacher, provide equipment, and defray the traveling expenses of the teacher.

The teachers interested in such expeditions have formed a School Journey Association, which publishes the School Journey Record. From the Torriano Avenue Guide, the following aims and objects are quoted:

- (1) To bring teachers and scholars into closer touch with one another.
- (2) To foster habits of good-fellowship, self-reliance, and unselfishness.
- (3) To study nature on a larger scale than is possible in the classroom.
- (4) To investigate the causes which produce scenery.
- (5) To secure rock, plant, and animal specimens near London.
- (6) To acquire the habit of learning from the world at large, as well as from books.
- (7) To extend our knowledge of mankind, past and present.
- (8) To make a special study of a port (Harwich).
- (9) To observe various forms of labor, "especially the naval," and so obtain a better idea as to what we are fitted for.
- (10) To gain health and vigor from a week's life at the seashore.
- (11) To learn how to spend a holiday intelligently and happily.

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<sup>1</sup> See p. 155.



With the development of the work, a large number of hotels, farms, cottages, and country camps have been listed which can be used as centers for expeditions. The cost of the journeys varies considerably. Some schools keep the pro rata cost down to \$1.50 a week. The expeditions are planned for normally well children, but there is no reason why they could not be undertaken in moderation for the physically debilitated.

In Italy, where inclement weather does not so often need to be considered, whole classes may be seen carrying light-weight portable desks and knapsacks, and journeying from place to place under the guidance of an experienced teacher. Wherever the locality invites them, they can unstrap their desks, chairs, and conduct an informal recitation.

Very little work of this sort has been done as yet in the United States, but there is no reason why it should not be more widely undertaken.

*Playground classes.*—Another form of open-air education increasingly in use in England is the so-called playground class. This simply means that certain classes go to the playground for recitation. Detroit, Mich., where most of the schools have large, shady yards, removed from the business streets, tried a similar plan several years ago with considerable success. It is only practicable where the yard is attractive and removed from noise and dust. Contrary to the expectation of the teacher, wherever such classes have been conducted it has been found that the attention of the children has been excellent, and that discipline has caused no difficulty.

*Physical exercises.*—The place of physical culture in the curriculum of an open-air school has been much discussed. Some physicians have gone so far as to forbid any form of violent exercise for the children in an open-air school class. Most, however, have recognized the value of properly supervised exercise adapted to the need of the individual child. The Swedish remedial exercises are frequently used and highly recommended by teachers in the foreign schools. Breathing exercises are sometimes given with the children stripped to the waist, so that the instructor can observe the chest formation and the action of the lungs.

The teachers at the Ethical Culture School in New York City believe that play constitutes "perhaps the largest single factor in the development of the open-air school children." Only once a day, in this school, does one lesson follow another without the intervention of recess or lunch and rest period, and then there is a 5-minutes' intermission devoted to vigorous play. If a child has become nervous or confused in one lesson, he has time to regain his poise and start afresh in the following period. Besides, intellectual food, just as

physical food, needs time for digestion, and during this time stuffing is harmful.

*Education means growth.*—If the function of all well-directed education is to foster growth, there can be no question that the open-air school affords that opportunity in large measure. Most children who apply for admission at American open-air schools come with previous school records of poor attendance, low-grade scholarship, and depleted energy. The transformation which takes place in their attitude toward school and toward life is universally recognized. To free a child from such handicaps before they have seriously affected his career is the inspiring task set before the teacher of the open-air school. Toward its accomplishment every facility of educational organization and curriculum should be directed.

## Chapter XIII.

### RESULTS OF OPEN-AIR SCHOOLS.

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In the United States it is an accepted theory that every child should have at least that amount of formal education which is measured by the completion of the work of the grammar school. In recent years attention and interest have centered increasingly on the more than 50 per cent of all the children who do not achieve this minimum standard. Our attention would have been called to this subject earlier if these pupils had accumulated in the schools. Children leave school both because they succeed and because they fail, and the public has accommodately absorbed the failures as well as the successes.

Health inspection of school children and the general advance in social work have been factors largely responsible for the new attitude on this subject. The public now wants to know to what degree adverse physical, economic, and environmental conditions are responsible for the failure of children to get at least through the grammar school. On page 161 of his book on Medical Inspection of Schools Dr. Ayres gives a table which is perhaps one of the most definite statements, though by no means final, yet made as to the effect of physical handicaps on school progress. The table, based on a study of 3,304 children, in 1908, gives the years required by defective and nondefective children to complete the eight grades of the public schools of New York City.

<i>Years required to complete eight grades.</i>	
Children with—	Years.
No defects .....	8.0
Defective vision.....	8.0
Defective teeth.....	8.5
Defective breathing.....	8.6
Hypertrophied tonsils.....	8.7
Adenoids.....	9.1
Enlarged glands.....	9.2

Dr. Ayres further says:

If these figures are substantially significant for all New York City school children, their educational and economic import is great. According to the data, the child with seriously defective teeth requires half a year more than a

nondefective child to complete the eight grades. About one-half of the children have seriously defective teeth. The handicap imposed by defective breathing means six-tenths of a year. About one child in seven has defective breathing. The child with hypertrophied tonsils takes about seven-tenths of a year more than he should. About one child in every four has hypertrophied tonsils. The extra time required by the child with adenoids is about one and one-tenth years. About one child in eight has adenoids. The pupil with enlarged glands requires one and two-tenths years extra. Nearly half of the children have enlarged glands.

Dr. Ayres points out that these figures are confined to one city and to a comparatively small group of children, and warns against any large generalization. However, the figures are significant as an indication. Health inspection in public schools has everywhere shown that a large percentage of school children have physical defects of one kind or another.

The open-air school has definitely undertaken to deal with school children from the health side; consequently, in reports of nearly all the open-air schools where results are given they are largely in terms of physical improvement. On the other hand, the usual public-school records are mainly concerned with intellectual attainments and school attendance.

There is widespread interest in the results of open-air school work. Perhaps the questions most frequently asked are about the effect of open-air schools on the grade standing of the children. This is especially true of teachers and school authorities. Long emphasis on the importance of passing examinations and making grades, and the fact that the teachers themselves are ranked according to their success in getting children through the course in a given time, account for the interest on this point.

The child needs both health and education. It profits him little to achieve the school work if he loses his health. The problem is to use the eight years which are required by the compulsory-education law from each child in such a way that it will give him the maximum of both physical fitness and training for service.

In the preparation of this bulletin an effort was made to secure as accurate data as possible on both physical and intellectual results in open-air school work. The questionnaire sent out by the United States Bureau of Education<sup>1</sup> did not cover the matter of school standing, but it did call for points concerning the physical, social, and economic conditions of children. The school standing and progress of the children in Chicago open-air schools were studied independently, however, and the findings will be made a part of this chapter.

In order that the reader may have some of the points on the social and economic conditions of the children directly before his

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<sup>1</sup> See Chap. III.

mind while considering results, a slight repetition may be warranted. The questionnaire was answered for 598 open-air school children in Chicago and for 620 children in open-air schools from other cities. The average number of members in the families of all the open-air children in the study was 6.15, and the average number of rooms to the family 4 plus. The income in more than 85 per cent of the families was about one-half the amount set in the standards established by different authorities mentioned in the chapter on social and economic conditions.

The children of the open-air schools for practically all of the cities for which returns were made are selected on the basis of physical needs. In the following table the symptoms which are largely determinative in the selection of children are grouped under the general head of "Principal diagnostic findings," and cover tuberculosis, anemia, malnutrition, chronic heart troubles, and bronchitis. Other defects, such as diseased tonsils, adenoids, and decayed teeth, are given in another division, together with data on defects corrected. Each general division is indicated by heavy lines. The table gives typical conditions and results. It does not, in most cases, include all the open-air school children of the city reporting.

Physical condition of 1,218 children on admission to open-air schools, and certain results obtained in one year's work in such schools.

	Bos- ton.	Chicago.	Cincin- nati.	Cleve- land.	Louis- ville.	Minne- apolis.	Mont- clair.	New- ark.	New York.	Oak- land.	Pitts- burgh.	Provi- dence.	Roch- ester.	St. Louis.	Sche- nectady.	Spring- field.
Number of pupils studied.....	46	598	50	123	15	54	14	45	80	24	18	25	26	45	30	25
PRINCIPAL DIAGNOSTIC FINDINGS.																
Tuberculosis.....	22	450	1	62	5	49	4	18	7	11	8	12	6	38	1	15
Anemia and malnutrition.....	21	136	47	56	8	2	10	24	73	10	8	10	13	6	28	6
Chronic heart disease, bronchitis, etc.		12	1		2	3		1		1		3				1
Unrecorded.....	3		1	5	0	0	0	2	0	2	2	0	7	1	1	3
MINOR DEFECTS, AND RESULTS OF CARE.																
Children having diseased tonsils.....	10	188	18	17	11	17	7	17	26	16	6	6	8	7	9	
Tonsil defects corrected.....	5	81	6	7	6	7	7	13	0	7	6	4	0	2	3	
Children having adenoids.....	8	165	6	11	9	20	7	20	4	13	9	6	4	6	8	
Children having adenoids removed.....	5	65	3	7	6	7	7	13	0	7	8	4	0	4	3	
Children having defective teeth.....	28	466	36	41	5	40	14	43	38	19	16	23		18	26	
Children having teeth defects corrected.....	17	347	34	1	2	14	4	42	3	19	12	21		14	7	
Children having defective eyes.....	8	152	5	11	3	20	5	12	1	10	5	7	4	6	7	3
Children having eye defects improved or corrected.....																
Children having ear defects.....	5	94	2	8	2	7	1	9	0	10	2	4	0	2	6	0
Children having ear defects improved or corrected.....	2	36	1			3		1		3				1		
Children having nose defects.....	2	14	0			0		1		1	1			1		
Children having nose defects improved or corrected.....		89		1										1		
		26		0							0			1		
MINOR UNCLASSIFIED AILMENTS.																
On admission.....	31		3	27	5	39	22	12	44	12	11	5	19	27	15	8
Number of such defects improved on dis-charge.....	27		1	25	4	39	21	5	44	12	7	4	16	27	13	8
WEIGHT.																
Children who gained in weight.....	45	546	49	96	15	46	13	29	79	19	18	22	20		22	130.75
Children who lost in weight.....	1	24		14		6	1						6		6	21
Children whose weight remained the same.....		10	1	11		1		1	1			3			2	
Total gain in weight.....pounds..	248.29	2,870.75	297.27	362.00	93.75	163.88	93.57	167.25	362.00	184.50	131.25	88.00	110.75		52.00	
Average gain in weight.....pounds..	5.40	4.95	5.94	3.00	6.25	3.09	6.68	5.57	4.52	9.71	7.28	3.52	4.26		1.73	6.23

Physical condition of 1,218 children on admission to open-air schools, and certain results obtained in one year's work in such schools—Continued.

	Bos- ton.	Chicago.	Cincin- nati.	Cleve- land.	Louis- ville.	Minne- apolis.	Mont- clair.	New- ark.	New York.	Oak- land.	Pitts- burgh.	Provi- dence.	Roch- ester.	St. Louls.	Sche- nectady.	Spring- field.
HEIGHT.																
Average gain in height.....inches..	2.00	1.5	1.6			1.2		1.2	1.5	2.76		1.5	1.0			
HEMOGLOBIN TEST.																
Children who gained .....		295	20		8			37	68		14	18	15	1		
Children who lost .....		15			2			3					2			
Children who remained the same.....		124	5		2			5	12			4	9	1		
Total gain <sup>1</sup> .....		2,455	215		75			430	740		135	194	160	10		
Average gain <sup>1</sup> .....		8.3	8.6		6.3			9.5	9.7		9.6	8.8	6.2	5.0		

<sup>1</sup> In ratio of red corpuscles to white, 100 is taken as a standard.

The material in the above table gives some indication of the health activities carried on in open-air schools. A summary is given below:

CONDITION ON ADMISSION.	CONDITION ON DISCHARGE.
Of 598 Chicago open-air school children—	
188 had diseased tonsils.....	81 children, i. e., 43 per cent, had tonsils removed.
165 had adenoids.....	65 children, i. e., 40 per cent, had adenoids removed.
406 had decayed teeth.....	347 children, i. e., 74 per cent, had teeth corrected.
152 had defective eyes.....	94 children, i. e., 62 per cent, had improved.
36 had defective ears.....	14 children, i. e., 38 per cent, had improved.
89 had defective nose.....	26 children, i. e., 29 per cent, had improved.

CONDITION ON ADMISSION.	CONDITION ON DISCHARGE.
Of 620 open-air school children from different cities—	
175 had diseased tonsils.....	78 children, i. e., 48 per cent, had tonsils removed.
131 had adenoids.....	73 children, i. e., 56 per cent, had adenoids removed.
347 had decayed teeth.....	190 children, i. e., 54 per cent, had teeth corrected.
97 had defective eyes.....	58 children, i. e., 60 per cent, had improved.
11 had defective ears.....	5 children, i. e., 45 per cent, had improved.
3 had defective nose.....	1 child, i. e., 33 per cent, had improved.

In addition to the above there were 308 other minor defects, of which 255 were improved on discharge.

The following table shows the results of hæmoglobin tests applied to children in open-air schools at the beginning and end of school year 1913-14. The Tallquist test was used:

Of 434 Chicago open-air school children—	
295, or 68 per cent, gained an average of 8 to 9 points.	
15, or 3 per cent, lost.	
124, or 29 per cent, remained the same.	
Of 227 open-air school children from different cities—	
181, or 79 per cent, gained an average of 7 to 8 points.	
8, or 4 per cent, lost.	
38, or 17 per cent, remained the same.	

Answers to the questionnaire on the points covering cleanliness, ventilation, regularity of meals, hours of retiring, etc., were incomplete and unsatisfactory. However, they were fairly well covered in the case of 154 families representing 210 children in four of the Chicago open-air schools. In these schools the nurses gave special attention to cooperation with the home, and the results show that there is a fruitful field for effort in this line. It should be understood, however, that the same results were often secured in other open-air schools, because everywhere there is more or less direct effort on the part of teachers, physicians, nurses, and others connected with the school to secure the hearty cooperation of the home.

When the children entered, 118, or 76.6 per cent, of the 154 families represented kept their homes passably clean. On discharge this number had arisen to 148 families, or to 96 per cent. Similarly, 96 families, or 62.3 per cent of the total, had, when the children were admitted, satisfactory provisions for ventilation, but at the close of the year this number had been increased to 152 families, or all but 2.



Only 94 of the 210 children were supplied in the beginning with regular meals at home. At the close this number had been increased to 186. Again, when the children first entered, only 85 of them went to bed before 9 o'clock in the evening, but at the close of the year's work this number had been increased to 174. On admission 160 of the children, all tubercular, were compelled to share their beds with others. On discharge this number had been reduced to 118.

The home conditions of open-air school children have been more fully dealt with in the chapter on social and economic conditions.

Inadequate income, overcrowding, and lack of conveniences are definite and serious handicaps. However, it is possible in most of these homes to make certain improvements, and even the most discouraged families have responded to resourceful efforts of nurses, teachers, and others to improve conditions. Some of the families have been moved to better quarters, back porches have been made into sleeping rooms, tents put up in back yards, cots purchased to give the child a bed to himself, diets secured, instruction given on the preparation of food, hours of retiring, and regularity of meals, and many other definite services of this kind have been rendered. Few people habitually do the best they can, and when an interested and enlightened person enters such homes and makes the welfare of the little child the point of interest and contact, and when real help, not merely good natured but impractical advice, is offered, a great change may take place.

#### GAINS IN WEIGHT.

Gain in weight is perhaps the best single index of a child's physical progress and condition. In discussing this phase of the subject it is desirable to have an established norm.

For the sake of comparison two tables have been used: First, that published by Dr. L. Emmett Holt in *The Diseases of Infancy and Childhood*, 1912 (p. 20). This table is based on a study by Dr. Bowditch of 4,327 boys and 3,681 girls in the Boston public schools. These were normal average children of American parentage. The children were weighed with their clothing on. Most of the children in open-air schools are weighed stripped. The second table was compiled by the Board of Education of Chicago and was the result of a study of 2,788 Chicago schoolboys and 3,471 Chicago schoolgirls. This study was published in *Child Study Report No. 2* (pp. 12 ff.), 1900. These children were also weighed with their clothing on. The investigation covered all the children in certain schools, and therefore included many anemic and undernourished children. No racial distinction was made. This is one explanation for the differences between the two tables.

In order to arrive at the net weight of children, the Chicago Board of Education made careful computations as to the weight of clothing by age and sex. It found that the average weight for boys' clothing was 5.8 per cent of the gross weight; that of the girls' 5.2 per cent of the gross weight.

The following tables give Holt's standard and the Chicago Board of Education standard of weights by age and sex. The columns headed "Gross weight" are, respectively, Holt's standard and the board of education standard. The figures in the net-weight columns are obtained by deducting 5.8 per cent of the gross weight of the boys and 5.2 per cent of the girls. The net yearly gain is obtained by comparing the net weights on admission and on discharge.

A table gives the weight of clothing by age and sex and is obtained by applying the Chicago Board of Education standard of 5.8 per cent and 5.2 per cent, respectively, for boys and girls to the gross weights given by Holt and the Chicago Board of Education.

Normal weight, in pounds, for boys.

Ages.	Holt's standard.			Chicago Board of Education standard.		
	Gross weight (clothing included).	Net weight (5.8 per cent gross weight deducted).	Net yearly gain (same percentage deducted).	Gross weight (clothing included).	Net weight (5.8 per cent gross weight deducted).	Net yearly gain (same percentage deducted).
5.....	41.2	38.8	.....	.....	.....	.....
6.....	45.1	42.5	3.7	43.52	41.00	.....
7.....	49.5	46.6	4.1	47.66	44.90	3.90
8.....	54.5	51.3	4.7	52.52	49.47	4.57
9.....	60.0	56.5	5.2	58.07	54.70	5.23
10.....	66.6	62.7	6.2	63.30	59.63	4.93
11.....	72.4	68.2	5.5	68.85	64.86	5.23
12.....	79.8	75.2	7.0	75.30	71.93	7.07
13.....	88.3	83.2	8.0	83.98	79.11	7.18
14.....	99.3	93.5	10.3	94.14	88.68	9.75
15.....	110.8	104.4	10.9	105.82	99.68	11.00
16.....	123.7	116.5	12.1	117.39	110.58	10.90

Normal weight, in pounds, for girls.

Ages.	Holt's standard.			Chicago Board of Education standard.		
	Gross weight (clothing included).	Net weight (5.2 per cent gross weight deducted).	Net yearly gain (same percentage deducted).	Gross weight (clothing included).	Net weight (5.2 per cent gross weight deducted).	Net yearly gain (same percentage deducted).
5.....	39.8	37.7	.....	.....	.....	.....
6.....	43.8	41.5	3.8	41.61	39.45	.....
7.....	48.0	45.5	4.0	46.25	43.85	4.40
8.....	52.9	50.1	4.6	50.74	48.10	4.25
9.....	57.5	54.5	4.4	55.69	52.79	4.69
10.....	64.1	60.3	6.3	61.29	58.10	5.31
11.....	70.3	66.8	6.0	67.61	64.09	5.99
12.....	81.4	77.2	10.4	75.79	71.86	7.77
13.....	91.2	86.5	9.3	85.94	81.57	9.71
14.....	100.3	95.1	8.6	97.50	92.43	10.86
15.....	108.4	102.9	7.8	106.19	100.69	8.86
16.....	113.0	107.1	4.2	111.69	105.88	5.18

*Weight, in pounds, of clothing.*

Ages.	Boys.		Girls.	
	Holt.	Board of Education.	Holt.	Board of Education.
5.....			2.1	
6.....	2.6	2.52	2.3	2.16
7.....	2.9	2.76	2.5	2.40
8.....	3.2	3.05	2.8	2.64
9.....	3.5	3.37	3.0	2.90
10.....	3.9	3.67	3.3	3.19
11.....	4.2	3.99	3.7	3.53
12.....	4.6	4.37	4.2	3.93
13.....	5.1	4.87	4.7	4.47
14.....	5.8	5.46	5.2	5.07
15.....	6.4	6.14	5.5	5.51
16.....	7.2	6.81	5.9	5.81

As noted elsewhere, the average gain in weight for all of the Chicago open-air school children was 4.95 pounds, and the average gain for the children in open-air schools in other cities, 4.73 pounds. In order to know whether gains in weight are significant, they should be studied by age and sex and should be compared with established norms for children of the same age and sex. Gains in weight stated as isolated facts may mislead the person who deals with the figures. They often sound large, when perhaps they are below what the child should have gained in a given period. Rapid gains in weight in the early weeks or months in an open-air school are likely to be obtained, especially where meals are served as a part of the plan of the school.

Studies of gains in weight in Chicago open-air and open-window schools are indicated in the tables following. They give the weight on admission, the year's gain, and the percentage of gain of 169 girls and 165 boys, who were in Chicago open-air and open-window schools the entire school year 1913-14, together with corresponding figures for pupils of the same age, according to the Chicago Board of Education standard and that of Holt.

*Percentage of gain in weight made by 169 girls and 165 boys in Chicago open-air schools the full school year 1913-14, compared with the percentage of gain in weight of children of the same age, as established in the standards by Holt and the Chicago Board of Education.*

GIRLS.

Ages.	Number of pupils.	Actual average weight at beginning of school year.	Actual average gain during school year 1913-14.	Per cent of gain.	Holt's standard.			Board of Education.		
					Normal weight.	Normal gain.	Per cent of gain.	Normal weight.	Normal gain.	Per cent of gain.
		<i>Pounds.</i>	<i>Pounds.</i>	<i>Per cent.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Per cent.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Per cent.</i>
7.....	4	43.9	2.4	5.5	41.5	4.0	9.6	39.5	4.4	11.1
8.....	10	47.1	4.5	9.5	45.5	4.6	10.1	43.8	4.3	9.8
9.....	27	50.7	4.4	8.7	50.1	4.4	8.8	48.1	4.7	9.8
10.....	20	52.3	4.4	8.4	54.5	6.3	11.6	52.8	5.3	10.0
11.....	28	55.8	5.5	9.9	60.8	6.0	9.9	58.1	6.0	10.3
12.....	33	62.7	6.5	10.4	66.8	10.4	15.6	64.1	7.8	12.2
13.....	21	72.0	10.2	14.2	77.2	9.3	12.0	71.9	9.7	13.5
14.....	22	76.4	8.5	11.1	86.5	8.6	9.9	81.5	10.9	13.4
15.....	4	77.5	5.2	6.7	95.1	7.8	8.2	91.8	8.9	9.7

Percentage of gain in weight made by 169 girls and 165 boys in Chicago open-air schools the full school year 1913-14, compared with the percentage of gain in weight of children of the same age, as established in the standards by Holt and the Chicago Board of Education—Continued.

BOYS.

Ages.	Num-ber of pupils.	Actual average weight at be-ginning of school year.	Actual average gain during school year 1913-14.	Per cent of gain.	Holt's standard.			Board of Education.		
					Normal weight.	Normal gain.	Per cent of gain.	Normal weight.	Normal gain.	Per cent of gain.
		Pounds.	Pounds.	Per cent.	Pounds.	Pounds.	Per cent.	Pounds.	Pounds.	Per cent.
7.....	6	41.1	3.7	9.0	42.5	4.1	9.6	41.0	3.9	9.5
8.....	13	46.9	2.9	6.2	46.6	4.7	10.1	44.9	4.6	10.2
9.....	21	49.9	3.7	7.4	51.3	5.2	10.1	49.5	5.2	10.5
10.....	24	58.3	4.1	7.0	56.5	6.2	11.0	54.7	4.9	8.9
11.....	28	59.7	5.0	8.4	62.7	5.5	8.8	59.7	5.2	8.7
12.....	18	63.4	6.1	9.6	68.2	7.0	10.3	64.8	7.1	10.9
13.....	29	69.4	7.0	10.1	75.2	8.0	10.6	71.9	7.2	10.0
14.....	14	72.1	9.1	11.2	83.2	10.3	12.4	79.0	9.7	12.3
15.....	9	79.9	10.8	13.5	93.5	10.9	11.6	88.7	11.0	12.4
16.....	3	67.6	5.2	7.7	104.4	12.1	11.6	99.7	10.9	10.9

Perhaps the only comment to be made here is that the large gains in weight made during adolescent growth occur a year or more later with the open-air school children than with those indicated in the other standards.

Weight of same girls and boys at the close of the school year 1913-14 compared with the standard set by Holt and the Chicago Board of Education for pupils of the same age.

GIRLS.

Ages.	Number of pupils.	Actual average weight.	Normal weights ac-cording to—	
			Holt.	Chicago Board of Educa-tion.
		Pounds.	Pounds.	Pounds.
7.....	4	46.3	45.5	43.9
8.....	10	51.6	50.1	48.1
9.....	27	55.1	54.5	52.8
10.....	20	56.7	60.8	58.1
11.....	28	61.3	66.8	64.1
12.....	33	69.2	77.2	71.9
13.....	21	82.2	86.5	81.6
14.....	22	84.9	95.1	92.4
15.....	4	82.7	102.9	100.7

BOYS.

7.....	6	44.8	46.6	44.9
8.....	13	49.9	51.3	49.5
9.....	21	53.6	56.5	54.7
10.....	24	62.4	62.7	59.6
11.....	28	64.7	68.2	64.9
12.....	18	69.5	75.2	71.9
13.....	29	76.4	83.2	79.1
14.....	14	81.2	93.5	88.7
15.....	9	90.7	104.4	99.7
16.....	3	72.8	116.5	110.6

It will be recalled that the average gain for the Chicago children was a little larger than the average for the combined number of children reported from other cities. In considering these tables the physical condition of these children should constantly be borne in mind. The figures for the Chicago children, as well as the children from other cities, covered only the 10 months' school year. The figures given by Holt and the Chicago Board of Education are for a full year. In the case of 60 Chicago children who were in the open-air schools two full school years, there was a slight increase in weight during the summer months. Of the 60 children, 30 gained, 27 lost, and 3 remained the same. It resulted in an average increase of twenty-two one-hundredths of a pound for the whole group. With one exception the schools studied were in session only five days a week, and most of them only the usual school hours. In most instances there were two meals a day at the school. In the Chicago schools the food values average 1,100 calories per pupil per day. It is the experience in the Chicago open-air schools that children lose in weight Saturdays and Sundays and on holiday vacations.

In this connection there are presented herewith certain data on the increase in weight of children in open-air schools in England, which are taken from the report of the school medical officer on open-air schools to the education committee of the London County Council, March, 1913. The tables give results obtained with 93 children who were in the Birley House open-air school in the school year 1911-12. These children were admitted to the school by the examining medical officer on account of the following conditions:

Malnutrition and general poor physique.....	30
Family history of or signs suggesting phthisis.....	22
Phthisis .....	19
Anemia .....	9
Chest conditions (nontubercular) .....	4
Enlargement of glands .....	5
Other conditions.....	4

The following table shows the average weight (expressed in kilograms) of these children, by ages, on admission to the Birley House school, compared with the corresponding averages of all London elementary school children. (A kilogram equals a little more than 2.2 pounds.)

*Birley House school children compared with all London elementary school children as to average weight.*

Boys.				Girls.			
Age last birthday.	Birley House children.	Average weight on admission.	Average weight of all L. C. C. school boys.	Age last birthday.	Number of children.	Average weight on admission.	Average of all L. C. C. school boys.
		Kilo-grams.	Kilo-grams.			Kilo-grams.	Kilo-grams.
7.....	4	22.57	(1)	7.....	1	20.70	.....
8.....	4	22.32	23.47	8.....	4	19.10	22.92
9.....	7	23.78	25.46	9.....	9	23.10	25.00
10.....	7	26.77	27.59	10.....	7	26.35	27.16
11.....	11	28.62	29.25	11.....	7	27.80	29.87
12.....	11	34.26	32.46	12.....	8	28.81	33.32
13.....	3	33.13	36.40	13.....	2	35.30	37.71

<sup>1</sup> Not recorded.

It will be noted that in every instance the open-air school children on admission were below the average weights of “all London County Council school children.”

The next table shows the average gain in weight in kilograms in each age group during the 40 weeks covered by the study, compared with the corresponding averages of all London elementary school children.

*Birley House school children compared with all London elementary school children as to average gain in weight.*

Boys.				Girls.			
Age last birthday.	Birley House children.	Average gain in 40 weeks.	Average gain in standard boys.	Age last birthday.	Number of children.	Average gain in 40 weeks.	Average gain in standard girls.
		Kilo-grams.	Kilo-grams.			Kilo-grams.	Kilo-grams.
7.....	4	2.7	(1)	7.....	1	1.5	(1)
8.....	4	1.7	1.56	8.....	4	3.9	1.67
9.....	7	2.2	1.78	9.....	9	2.9	1.89
10.....	7	2.7	1.78	10.....	7	3.4	2.42
11.....	11	2.7	2.33	11.....	7	3.5	2.89
12.....	11	3.8	2.89	12.....	8	4.2	3.33
13.....	3	4.3	2.67	13.....	2	4.9	3.67

<sup>1</sup> Not recorded.

The same report gives another table which shows the average weekly gain in weight in kilograms at various ages compared with the corresponding average weekly gain of all London elementary school children.

*Birley House children compared with all London elementary school children, as to average weekly gain in weight.*

Boys.				Girls.			
Age last birthday.	Birley House children.	Average weekly gain.	Average weekly gain in standard boys.	Age last birthday.	Birley House children.	Average weekly gain.	Average weekly gain in standard girls.
		Kilo-grams.	Kilo-grams.			Kilo-grams.	Kilo-grams.
7.....	4	0.07		7.....	1	0.04	
8.....	4	.04	0.04	8.....	4	.10	0.04
9.....	7	.05	.04	9.....	9	.07	.05
10.....	7	.07	.04	10.....	7	.08	.06
11.....	11	.07	.06	11.....	7	.09	.07
12.....	11	.10	.07	12.....	8	.10	.08
13.....	13	.11	.07	13.....	2	.13	.09

The Birley House school was in session six days a week, from 9 o'clock in the morning until 6 in the afternoon. The children were given three meals a day at this school.

A hæmoglobin test was also made of these children. Quoting again from the report of the medical officer of the London County Council:

Some measure of improved conditions of bodily health is afforded by the estimations of the hæmoglobin content of the blood; the summary of these (made with Tallquist's scale) is set out in the table below, 100 being taken as normal.

*Hæmoglobin averages at Birley House, 1912.*

Occasions.	Boys.	Girls.
At opening of school.....	86.6	85.3
At end of 24 weeks.....	89.1	88.7
At end of 44 weeks.....	91.8	90.7

It may be of interest to compare the gains in weight of the Birley House open-air school with those of Chicago open-air school children. The following table gives such a comparison by age and sex between 85 Birley House school children and 334 Chicago open-air school children:

*Comparison of gains in weight between Chicago open-air school children and children of the Birley House open-air school, London, England.*

Boys.			Average gain in 40 weeks.		Girls.			Average gain in 40 weeks.	
Ages.	Chicago.	Birley House.	Chicago.	Birley House.	Ages.	Chicago.	Birley House.	Chicago.	Birley House.
7.....	6	4	3.7	5.94	7.....	4	1	2.4	3.30
8.....	13	4	2.9	3.74	8.....	10	4	4.5	8.58
9.....	21	7	3.7	4.84	9.....	27	9	4.4	6.38
10.....	24	7	4.1	5.94	10.....	20	7	4.4	7.48
11.....	28	11	5.0	5.94	11.....	28	7	5.5	7.70
12.....	18	11	6.1	8.36	12.....	33	8	6.5	9.24
13.....	29	3	7.0	9.46	13.....	21	2	10.2	10.78



The above tables show that in every instance the gains of children in the Birley House school, England, were greater than those of the Chicago children. The discrepancy in numbers should be borne in mind—334 Chicago children compared with 85 in the Birley House school.

Again, the Birley House school was in session six days a week and from about 8.30 in the morning until 6 o'clock in the evening. Three meals a day were served in the Birley House school and two in the Chicago schools. The one day extra a week gave the Birley House school children 40 extra days.

As has been stated, it is the experience in the Chicago schools that children lose in weight over week ends and on holidays. A perusal of records in general seems to indicate the desirability of a six-days school week for open-air school children. In some of the foreign schools the children are in the school seven days a week.

In the report of the school medical officer of Bradford, England, for the year 1912 (p. 45) is another interesting table showing the average gain in weight, height, hæmoglobin, chest measurement, and average duration of attendance at Bradford (England) open-air school.<sup>1</sup>

*Showing the average gain in weight, height, hæmoglobin, chest measurement, and the average duration of attendance of children at the open-air school.*

Diseases.	Children.	Weight (kilo-grams).	Height (centi-meters).	Hæmo- globin.	Chest measure- ment (in inches).	Average stay (in months).
Phthisis:						
Boys.....	35	2.93	4.23	23.62	1.14	6.56
Girls.....	36	2.44	3.01	21.76	1.22	7.00
Other tubercular diseases:						
Boys.....	17	1.94	3.16	19.20	1.50	4.99
Girls.....	16	2.29	4.15	24.78	1.30	7.13
Anæmia:						
Boys.....	46	1.63	2.04	22.44	.80	3.92
Girls.....	86	2.31	2.88	23.48	1.20	5.01
Bronchitis and other chest diseases:						
Boys.....	20	1.62	2.14	22.00	.90	4.17
Girls.....	19	1.77	3.03	24.75	.82	5.48
Heart disease:						
Boys.....	4	2.32	3.37	26.50	1.80	6.25
Girls.....	10	2.51	3.06	19.40	.81	4.67
Chorea:						
Boys.....	4	1.72	22.00	20.75	.75	4.37
Girls.....	10	2.50	2.81	21.80	1.10	4.05
Rickets:						
Boys.....	5	1.83	1.70	28.00	1.33	6.15
Girls.....	2	3.35	4.20	29.50	.75	6.12
Other diseases:						
Boys.....	16	1.47	2.36	20.00	1.22	2.38
Girls.....	12	1.80	2.75	27.16	1.33	3.86
Average.....	<sup>1</sup> 338	<sup>2</sup> 2.15	2.93	21.57	1.12	5.13

<sup>1</sup> Total.

<sup>2</sup> Equals 4½ pounds.

A feature worthy of special comment in this table is the column giving the average length of stay for the different children. There

<sup>1</sup> Bradford, England, Education committee. Report of school medical officer, 1912, p. 45.



is a widespread interest in the result of open-air school work, and these tables are given as examples where records have been kept. They emphasize features which should be kept in mind by those conducting open-air schools. Average gains are, in themselves, interesting, but to be valuable as guides they should be studied with reference to age and sex and compared with carefully established norms.

SCHOLARSHIP.

No effort was made to gather data with regard to general educational results. In the city of Chicago, however, the Elizabeth McCormick Memorial Fund has made a study of the grade progress of 522 children who were in the Chicago open-air and open-window schools during the entire school year 1913-14. The grade of each pupil was recorded on admission to these schools in September, 1913. The following table is based on the grade marks given to the same children by the teachers at the close of school in June, 1914:

*Grade progress of 522 children in Chicago open-air and open-window schools, school year 1913-14.*

Number of children.	Grades made in school year 1913-14.
1.....	3
12.....	2
9.....	1½
387.....	1
113.....	0

The progress of these same children prior to their attendance in the open-air school is shown in the next table. Nine of these children entered the school during school year 1913-14 and were eliminated from the following study. Of the 522 children 25 had not completed a grade at the end of the school year 1912-13 and were not included. The table, therefore, concerns 488 of the 522 children.

The results shown in the table were arrived at as follows: The age of all the pupils was taken at the beginning of the school year 1913, as was also the number of grades completed by each child up to that date. These were known quantities. Second, the table assumes that, according to the usual standards, each child entered school in his seventh year; that he continued in school regularly, and that he should have made one grade each year. A table based on the above facts and assumptions follows:

*Average length of time required per grade for 488 children previous to attendance in open-air schools.*

Number of children.	Total number of years in school.	Number of grades completed.	Average number of years to make grade.
7.....	7	14	0.50
4.....	8	12	.67
1.....	5	7	.71
5.....	15	20	.75
4.....	18	20	.80
1.....	5	6	.83
107.....	337	337	1.00
7.....	58	49	1.14
5.....	35	30	1.16
30.....	180	150	1.20
27.....	135	108	1.25
2.....	18	14	1.28
36.....	156	117	1.33
13.....	91	65	1.40
1.....	10	7	1.42
51.....	204	136	1.50
1.....	8	5	1.60
28.....	140	84	1.67
19.....	133	70	1.75
1.....	9	5	1.80
79.....	304	152	2.00
6.....	42	18	2.33
12.....	66	24	2.50
2.....	16	6	2.67
20.....	78	28	3.00
2.....	14	4	3.50
9.....	36	9	4.00
5.....	25	5	5.00
1.....	6	1	6.00
2.....	14	2	7.00
488			

This table shows that previous to entering the open-air school 129 children made a grade in a year or less; that 339 averaged more than one year to a grade. In the open-air school 409 made a grade in a year or less and 113 failed to make a grade in their year in the open-air school. We call attention again to the assumptions on which the table is based, also to the fact that there were 522 children in the first table and 488 in the second. We realize that it is too much to assume that previous to the admission to the open-air school all the children went regularly. The study is offered more as a suggestion and to stimulate interest and further study than as presenting anything final on the subject. It raises the interesting question also as to how many years a child should spend in a grade without attracting attention and receiving such care as he needs.

Another study was made by the Elizabeth McCormick Memorial Fund of the children in the open-air schools in the school year 1911-12. The school progress of 151 children in the open-air schools in Chicago in that year was compared with the scholarship of the same children in the regular schools for the school year 1910-11. These figures were taken from the grade marks as given by the

teachers. The marks for the 151 children were averaged and were as follows:

Average scholarship of 151 children in open-window rooms, school year 1911-12 .....	84. 54
Average scholarship of same 151 children in regular schools, school year 1910-11.....	74. 43
<hr/>	
Average gain in scholarship in open-window rooms.....	10. 17

One hundred and four of the 151 children improved in scholarship.

Thirteen of the 151 children lost.

Thirty-four of the 151 children remained the same.

In the report of the Rochester (N. Y.) Public Health Association for 1911-13, page 257, the results of scholarship in the Rochester open-air schools are given as follows: Of 149 children in attendance, 111 made usual grade progress; 14 made more rapid progress, and 12 less rapid progress than is customary in the regular school. The Ethical Culture School of New York City, in its prospectus of 1914, states that the majority of children have accomplished as much work in the promotion subjects as those in corresponding grades indoors. The South Manchester (Conn.) open-air school for 1913 reports that 3 children have done almost two years' work in one, 12 have completed 1 year's work in one year, and 3 are not doing much of anything, being extremely nervous; 4 have just entered. The educational club of South Manchester, Conn., in its report for 1913-14, reports that the children in their open-air school range from 6 to 15 years, and in grades from one to eight. Of 22 children in school at that time, 11 completed a year's work in a year's time. Of this number 3 were called "slow" and had repeated one or more grades previous to entering the open-air school. Four pupils did a year's work in 30 weeks; 3 of these were repeaters from the year before. Of the remaining 7 all were in poor physical condition. Three failed to make a grade in a year, 1 was withdrawn, and the other 2 are not recorded. These are fair samples of the comments and records of open-air schools.

#### ATTENDANCE.

In the matter of attendance a number of studies have been made comparing attendance in open-air schools with that of closed-window rooms in the same city and for children of as near the same physical, social, and economic conditions as could be chosen. The open-window rooms usually show a better percentage of attendance. In the report of the health officer of the District of Columbia, for 1911, page 22, is this statement: "The number of days lost from illness in outdoor schools since the first examination is 60, while the indoor school was 161, average loss per pupil in outdoor school 2.40 days, for the indoor 4.79." The annual report for 1911-12, of the Civic

Club of Allegheny County, Pittsburgh, Pa., page 27, showed a record of absences for a 20-day period in March, 1912, in a roof school and in a primary room in one of the nearest public schools. Attendance in the open-air school was almost 2 per cent higher than that in the closed schoolroom. While something like 14 of the closed-room pupils were absent because of sick 'headaches, indigestion, sore throats, etc., not one of the children was out of the open-air school for such a cause.

The attendance record of 127 children in the Chicago open-air and open-window schools for the year 1911-12 was studied. Some of the records were incomplete and in such cases the children were not included in the study. Complete records were secured for 92 children. The comparison was made with the attendance of the same children in the regular schools for a corresponding period, both as to duration and time of year, next preceding their admission to the open-air schools. Of the 92 children, 61, or 66.3 per cent, showed a better record of attendance; 10, or 10.8 per cent, remained the same; 21, or 22.8 per cent, lost in percentage of attendance.

Contagious and infectious diseases are often important factors in school attendance. The absence of such diseases in open-air schools is a matter of frequent comment in open-air school reports. In Philadelphia the Christian Street open-air school reported that during the first 10 months of open-air school work no case of contagious diseases occurred among the children. Only two were absent on account of illness. Mrs. Ellenore Comstock Robertson's private open-air school, Syracuse, N. Y., in the report of December, 1913, says: "Since opening October 1, 1912, we have had no spread of contagious disease, although we have had among our pupils two cases of chicken pox, one of mumps, and one of whooping cough caught from brothers and sisters at home. Although our children have had colds, they do not seem to spread from one to another." The Ethical Culture School of New York, in its prospectus of 1914, says: "The health of most of the children has improved in rather a marked degree. Several children, who previous to entering had shown a tendency to take cold very easily, have overcome this weakness in a way which has delighted their parents. Even more remarkable has been the complete disappearance in a number of cases of nervous habits observable in every ordinary classroom, choreic symptoms, tendency to stutter when excited, etc." The open-air school at Springfield, Mass., reports an attendance record for the school year 1912-13 of 98.2 per cent. The principal says: "We have some children who are just beginning to know what it is to be regular in school attendance." E. L. Garling, superintendent of Maitland Sanitarium, Peppard Common, Oxon, England, says in report of February, 1914: "Our record of school attendance is very good, as

we have been remarkably free from minor ailments and casualties. The open-air life seems to promote a regular level of healthfulness which renders even so-called invalid children more capable of regular school attendance than normal children."

#### EXPERIENCE OF TEACHERS.

The reaction of open-air school work upon the teachers is interesting. The smaller number of children gives a greater opportunity for individual work and for a more intimate acquaintance with the child himself. This fact alone has great significance. The mass dealing with children may prevent really knowing the individual child at all. The more original and less formal methods possible in an open-air school, on account of small numbers, also are an aid to the teacher. She meets the child at more points of contact and more nearly on the child's own terms. The teacher has these and other advantages in addition to that of fresh air, which is as necessary to working efficiency as steam is to an engine. A teacher in Montclair, N. J., stated that she would agree to teach the children the same amount in the open air in one-third the time that would be required in a closed, heated room.

In London, England, in the Botanical Gardens open-air school, one teacher is quoted in *The Child*, of March, 1914, page 443, as saying that she had fewer headaches in the open-air schools. Another that she had been in better health in the open-air school than ever before. Both said they had not felt the cold at all. One said, "I would never teach in a closed room if I could help it; there is less nerve strain out of doors, both for the teachers and children; the fidgetiness and inattention which often arise from a badly ventilated room do not occur." In the annual report of the board of education, Grand Rapids, Mich., 1912, page 21, is a quotation from the principal of the open-air school:

To see children change in a few weeks from listless, drowsy, slow, gaping, lazy, snuffling children, whose special rôle is a habit of failure, into children with an air of superiority and confidence, and whose new rôle is a habit of success, has startled some of us into thinking. \* \* \* The law requires pupils to attend schools where the amount of oxygen is decreased, and also where the air is stagnant, overheated, too dry, impregnated with bad odors, and often laden with dust and bacteria. They are expected to do brain work, an essential condition of which is an adequate supply of oxygen. From the point of view of school hygiene, the question is raised why normal children should not be permitted the supply of oxygen that is an essential condition of the work required of them as well as children who are ill.

The following comments are from open-air school teachers in the cities indicated:

*Providence, R. I.*—I would not care to return to the closed room. My pleasure in my work makes me wish that, for the sake of the teacher as well as the pupil, every schoolroom might be an open-air room.

*Boston, Mass.*—For a score or more years my experience as a teacher has been gained in the public schools of this country, in good old New England, California, and the Middle West. Our teachers to-day are victims of nervousness, irritability, and so-called overwork. Those who have tried the outdoor work have been capable of more prolonged labor with far less fatigue. This is my own testimony, and nearly all associate teachers who have given it a fair trial feel there is no school for them like the open-air school.

*Chicago, Ill.*—Fresh air has done wonders for me. I am strong and fat and have gained 10 pounds since last year in spite of seven weeks' work in the summer. My complexion has undergone a complete change. Instead of being a sallow, dead, dry-skinned person, my skin is fresh, full of life, and rosy.

*Chicago, Ill.*—I have never in my life been so free from backache and extreme fatigue as I have been since I took the open-air school. "How do you keep so fresh?" asked another teacher last night. "I am always nervously exhausted after a dark, rainy day like this." I told her truthfully that I had ceased to dread such days. Not even rain can dispel the sunshine in the open-air school.

#### EFFECTS ON INDIVIDUAL CHILDREN.

The effort has been in this chapter to give some indication of results obtained in open-air school work. It has been necessary to deal with the children in groups and by averages; however, the small army of debilitated children in the open-air schools and the vastly larger numbers of the same kind of children not yet properly cared for, like every other army, is resolvable into individual units. Somebody is especially interested in each child. It would be interesting to narrate the individual stories of these open-air school pupils, for every story would have its own special appeal. This is strikingly true when proper nurture and care are given to children who previously have not had opportunities and who have been prevented from making normal progress by reason of physical handicaps.

A teacher in the Buffalo open-air school reports a girl of 12, whose mother brought the child to the school quite in despair on account of her daughter's nervous condition. The child was thin, undernourished, and anemic. She was nervous, discouraged, and often cried without any apparent cause. She had defective eyes and ears, and poor teeth. She was suffering from adenoids and hypertrophied tonsils, and was a mouth breather. She was admitted to the open-air school and in the year following gained 20 pounds, the anemia and malnutrition disappeared, her eyes were treated and made to function properly, her hearing was corrected, the adenoids and tonsils were removed and she was able to breathe normally and properly. She became ambitious, happy, and capable in every way. Her attendance was practically perfect. The child's happiness was fully equaled by that of the mother, who had not believed such a transformation possible.

The superintendent of the open-air school at Grand Rapids reports the story of a little girl who was brought to his office by her mother,



who declared that the child had not been able to attend school for more than two weeks at a time for years. She requested that the child be placed in the open-air school. The superintendent responded to her request and says that in the past year the child did not miss a day and besides that made three grades in one year, and gained 25 pounds in weight.

In the same school was a boy who was unable to remain in the climate of Grand Rapids the previous year and spent the cold months in Texas. His parents were planning to send him to Texas again, but decided to try the fresh-air school. The superintendent reports that he attended school regularly all winter and made good progress in his studies.

The following story was told by one of the Chicago open-air school-boys in a little autobiography which he wrote for the Open-Air Smile, a monthly periodical which was started by the children of the Chicago open-air schools:

I was born in a little gray house in a little country town near the city of Kiev. When I was 2 years old my downfall began. First I fell sick and had the scarlet fever, and as soon as I was cured of that I caught diphtheria, and after I was cured of that I caught pneumonia. I stayed in bed for a year and I never got out of bed for that long time. When I was 6 years old I came to America to the city of Chicago. Everybody had told us in Russia that gold was lying everywhere in the streets. I started to go to school at the Garfield School. Later, we moved to a different street, so I took a transfer to the Langland School, and later on we moved again, and then I came to the Goodrich School, which I attended a couple of years. When I was finally in the seventh grade I was sent out to Winfield tuberculosis camp. I stayed there six months, because I was charged with having tuberculosis. Those six months passed away so quickly that it seemed to me like six weeks. I think it was the happiest time of my life, staying out there. When I went home hardly anybody recognized me, because I was not the sick little fellow that I was when I went to Winfield, but a big, strong, and healthy boy with cheeks like roses. Later on I was put in the Foster open-air room, where I am now in the eighth grade.

The stories of practically all the children in open-air schools are of tragic interest. In the great majority of cases the improvement is marked, and the response by the pupil is most gratifying, not only to the teachers and to the parents, but the children themselves are conscious of the change.

The chief object of these schools has been to build up the health of children, in order that they may become more capable of assimilating and benefiting by the instructions given in the ordinary schools, and that they may thereby become better qualified for the duties of life.

The material in this chapter gives some indication of the results that have accrued directly to the children and to the teachers. There has been an indirect effect upon the community itself and upon the

**general school problem, for the open-air school, in addition to its direct ministry to the children involved, has become an educational laboratory where more natural and less formal methods have been used and where experiments and systems have been tried which are directed to the needs of children. Wherever there is an open-air school will be found a group of people who are deeply interested in the school problem and who are determined that the public schools shall be as rich and fruitful as it is possible for the community to make them. They believe that it should be impossible for any pupil to sit through the seven or eight years required of every child, with his handicaps undiscovered and unrelieved and his school experience impaired or negatived by the presence of remediable defects. The immediate purpose of the open-air school will be realized only when all debilitated children now in the regular schools have a chance for fresh air, sufficient food, and a general hygienic life. The ultimate purpose is to keep the children from getting sick and anemic by emphasizing the rights of all to a sanitary and wholesome life.**





APPENDIXES.

APPENDIX A.

Social, economic, and hygienic conditions of 886 families of 1,062 open-air school pupils in 15 American cities.

Cities.	Families studied.				Tuberculous families.				Income.				Housing.				
	Number of families reported.	Members in families (including pupils) studied.	Number of open-air pupils in families.	Average number of persons in families.	Tuberculous persons (including pupils) in families.	Number of pupils who were tuberculous.	Average number of tuberculous persons to each family.	Percentage of tuberculous members.	Number of families reported.	Total number of members in families.	Number of pupils in families.	Total monthly income of families.	Average monthly income per family.	Average income per person per month.	Number of families reported.	Number living in tenements.	Number living in detached houses.
Chicago.....	280	2,342	488	6.16	683	389	1.79	29.1	285	1,784	371	\$12,520.20	\$43.96	\$7.02	375	274	101
Cincinnati.....	48	248	50	5.20	7	1	.15	2.8	35	194	36	1,389.00	36.83	7.16	43	34	9
Cleveland.....	87	587	123	6.70	75	61	.90	12.7	53	353	68	1,868.50	35.26	5.29	84	57	27
Louisville.....	14	98	15	7.00	8	5	.60	8.2	...	...	...	...	...	...	14	9	5
Minneapolis.....	46	277	54	6.00	74	51	1.60	26.7	41	247	48	1,740.40	42.45	7.04	45	14	31
Montclair.....	14	113	14	8.10	6	4	.40	5.3	9	65	9	289.50	32.17	4.45	13	6	7
Newark.....	45	263	45	5.70	22	18	.50	7.8	35	201	35	1,891.25	54.04	9.41	44	31	13
New York.....	76	491	80	6.50	14	7	.20	2.8	72	527	76	3,819.10	53.04	7.24	76	75	1
Oakland.....	20	101	24	5.10	12	11	.60	11.9	15	78	18	1,455.00	97.00	18.65	20	20	...
Pittsburgh.....	18	107	18	6.30	21	8	1.20	19.6	16	100	16	552.00	34.50	5.52	18	13	5
Providence.....	23	154	25	6.70	22	12	.90	14.0	21	142	23	723.00	34.45	5.09	23	18	5
Rochester.....	26	157	26	6.00	21	12	.80	13.4	...	...	...	...	...	...	26	8	18
St. Louis.....	39	191	45	5.30	70	38	1.90	36.6	25	135	30	1,181.65	47.27	8.75	36	32	4
Schenectady.....	25	163	30	6.50	1	1	.04	.6	20	127	23	1,714.50	85.73	13.50	25	13	12
Springfield.....	25	128	25	5.10	17	15	.70	13.3	15	84	15	746.00	49.73	8.88	25	19	6

Social, economic, and hygienic conditions of 886 families of 1,062 open-air school pupils in 15 American cities—Continued.

Cities.	Rooms..					Bedrooms.					Rent.					
	Number of families reported.	Total number of members in families.	Number of open-air pupils.	Total number of rooms.	Average number of persons per room.	Number of families reported.	Total number of members in families.	Number of open-air pupils.	Total number of rooms used as bedrooms.	Average number of persons per bedroom.	Percentage of rooms used as bedrooms.	Number of families reported.	Total number of rooms.	Total monthly rent of families studied.	Average monthly rent per family.	Average monthly rent per room.
Chicago.....	360	2,216	466	1,663	1.3	290	1,806	378	803	2.2	60.60	307	1,455	\$3,587.00	\$11.68	\$2.46
Cincinnati.....	47	242	49	155	1.6	47	242	49	99	2.5	65.00	43	137	510.00	11.86	3.32
Cleveland.....	86	582	122	369	1.5	82	562	116	236	2.4	63.00	67	301	835.00	12.47	2.74
Louisville.....	14	98	15	45	2.2	13	91	14	24	3.8	57.00	...	...	...	...	...
Minneapolis.....	46	277	54	245	1.1	45	274	53	124	2.2	51.25	39	207	525.60	13.46	2.54
Montclair.....	14	113	14	69	1.6	14	113	14	44	2.6	63.80	10	44	125.50	12.55	2.85
Newark.....	45	263	45	213	1.2	45	263	45	119	2.2	56.63	42	198	533.25	12.70	2.69
New York.....	76	491	80	280	1.8	6	40	6	15	2.7	79.30	68	252	1,044.00	15.36	4.14
Oakland.....	19	98	23	129	.8	17	88	21	59	1.5	52.00	5	28	75.00	15.00	2.68
Pittsburgh.....	17	107	17	48	2.2	17	107	17	36	2.9	75.00	17	48	204.00	12.00	4.25
Providence.....	23	154	25	120	1.3	23	154	25	69	2.2	57.50	21	114	217.00	10.33	1.90
Rochester.....	6	34	6	26	1.3	7	42	7	18	2.3	57.70	...	...	...	...	...
St. Louis.....	34	182	40	113	1.7	27	132	31	53	2.5	63.00	23	71	226.85	9.86	3.20
Schenectady.....	25	163	30	162	1.0	25	163	30	73	2.2	44.85	12	70	194.50	16.21	2.78
Springfield.....	25	128	25	145	.9	25	128	25	82	1.6	56.60	19	103	279.00	14.68	2.71

APPENDIX B.

ESTIMATED EXPENSE OF EQUIPPING AND MAINTAINING AN OPEN-WINDOW ROOM WITH FULL REGIME OF MEDICAL AND NURSING SERVICE, FEEDING, AND REST.

(TWENTY-FIVE CHILDREN—SCHOOL YEAR 10 MONTHS.)

FIRST YEAR.		FIRST YEAR—continued.
25 coats, at \$4.00	\$100. 00	<i>Service:</i>
1 teacher's coat	10. 00	Physician, at \$50
25 felt boots, at \$1.35	33. 75	per mo \$500. 00
Boots for teacher	1. 35	Matron, at \$40
25 cots, at \$3	75. 00	per mo 400. 00
25 sleeping blankets,		\$900. 00
at \$3.85	96. 25	<i>Food:</i>
25 weighting aprons,		Milk (1/4 qt., at 9
at 25 cents	6. 25	cents, per day
25 cot covers, at 20		per child) 337. 50
cents	5. 00	Bread 65. 00
25 pairs wool gloves,		Meat 70. 00
at 50 cents	12. 50	Groceries 115. 00
Gloves for teacher	. 50	587. 50
	\$340. 60	Total expense 1, 994. 10
Scales and measuring		
rod	30. 00	If the following equipment is
China and silver	20. 00	not furnished by the board
Kitchenware	30. 00	of education, the cost will
Supplies	20. 00	be:
	100. 00	Kitchen sink 15. 00
Thermometers and		Gas stove 25. 00
drugs	20. 00	2 cupboards 80. 00
Laundry	12. 00	2 kitchen tables 5. 00
Car fare	10. 00	2 dining-room tables 25. 00
Miscellaneous	10. 00	30 chairs, at \$1 30. 00
	52. 00	
8 window ventilators, at \$3	24. 00	
Total equipment	516. 60	180. 00

(TWENTY-FIVE CHILDREN—SCHOOL YEAR 10 MONTHS)—Continued.

## SECOND YEAR.

The suits should wear 3 to 4 years.		
The boots should wear 2 to 3 years.		
The gloves should wear 2 to 3 years.		
The cots should wear 5 years or more.		
Repairs on suits.....	\$12.50	
Repairs on boots, re-		
soling, at 60 cents..	15.00	
Repairs on cots.....	10.00	
10 pairs gloves, at 50		
cents .....	5.00	
		\$42.50
Replenishing china		
and silver .....	10.00	
Replenishing kitchen-		
ware .....	10.00	
Supplies (towels, nap-		
kins, etc.) .....	20.00	
		40.00
Thermometers and		
drugs.....	20.00	
Laundry.....	12.00	
Car fare.....	10.00	
Miscellaneous .....	10.00	
		52.00
Service for 10 months.....	900.00	
Food for 10 months.....	587.50	
Total expense for sec-		
ond year .....	1,622.00	

## APPENDIX C.

### RECIPES FOR OPEN-AIR SCHOOLS.

The following recipes for the preparation of foods especially adapted to the needs of the open-air school children of Chicago were worked out by the matrons, in cooperation with the physicians, nurses, dietitians, and teachers. They are here inserted for the guidance or help of those teachers who are working with children of a similar type and under somewhat comparable conditions. Each recipe is designed to serve 30 children.

#### SOUPS.

##### *Tomato and Lentil Soup.*

1½ lbs. lentils soaked over night.  
4 oz. bacon.  
4 oz. onions, fried in bacon drippings till nearly done.  
1 stalk celery.  
2 lbs. potatoes, cubed.  
1 lb. carrots.

Boil lentils about 3 hours, add vegetables and cook until done through. Add one can tomatoes. Season with salt, pepper, and small amount of vinegar, to taste.

##### *Navy Bean Soup.*

2 lbs. navy beans.  
Knuckle of veal.  
2 small onions.  
Celery.

Wash the beans and soak over night in cold water. In the morning put them on to boil, adding more water if necessary. Put in the knuckle of veal, a few stalks of celery, and 2 small onions. Cook slowly 3 hours, watching carefully, as it burns easily. Season to taste with salt, pepper, and paprika. Serve with slices of toast. Split pea soup may be made the same way.

##### *Tomato Soup with Rice.*

7 oz. rice.  
2 cans tomatoes.  
¾ teaspoonful baking soda.  
1 teaspoon butter.  
1 tablespoon salt.  
3 qts. boiling milk.

Stew and strain the tomatoes. Wash rice and put in double boiler with the boiling water and boil for half an hour, stirring with a fork. Add the strained tomatoes, baking soda and salt, pepper, butter, and hot milk. Cook all together for 20 minutes.

##### *Split Pea Soup.*

3 lbs. split peas.  
6 oz. onions.  
½ lb. salt pork or bacon.  
1 teaspoon celery salt.  
Pepper and salt.

Soak peas over night in cold water and one-third teaspoonful of baking soda. In the morning drain off water and add about 9 quarts of fresh, cold water. Boil slowly 3 or 4 hours, and put through colander. Fry salt pork with onions to a light brown. Add to peas, also seasoning. Serve with toasted squares.

*Vegetable Soup.*

2 lbs. beef.  
 15 cent soup bone.  
 4 oz. barley.  
 1½ lbs. potatoes.  
 ½ lb. cabbage.  
 ½ lb. turnips.  
 ½ lb. carrots.  
 4 oz. onions.  
 6 oz. celery.  
 1 lb. can tomatoes.  
 1 can corn.

Put soup bone and beef in 2 gals. of cold water. Let come to a boil slowly and skim. Boil 4 hours. Add salt to taste and barley. Chop together the potatoes, cabbage, turnips, carrots, onions, celery, tomatoes, corn, and add to the soup 2 hours before serving.

Cut all meat from the bone, run through chopper, and add to the soup.

**MEATS.***Baked Beef Stew.*

3½ lbs. beef.  
 1 lb. carrots.  
 ½ lb. turnips.  
 2 oz. onions.  
 1 clove garlic.  
 4 lbs. potatoes.  
 Seasoning.

Put beef, carrots, and turnips through coarse meat chopper; put over fire in about 5 quarts of boiling water.

Simmer for about ½ hour; put in seasoning, onions, and garlic. Put in potatoes, bake in moderately hot oven for 1½ hours. One-half hour before serving add thickening. It makes about 6½ quarts in all.

*Beef Loaf with Tomato Sauce.*

3½ lbs. chopped beef.  
 ½ lb. chopped pork.  
 1 egg.  
 1 lb. cracker crumbs or stale bread.

If bread is used, soak in cold water until tender; squeeze out water. Mix thoroughly with meat, seasoning well with salt and pepper. Make into loaf, not too thick, and bake about 1 to 1½ hours, basting often with drippings and hot water.

Put in saucepan 1 can tomatoes, 4 oz. onions, finely chopped, and 1 pt. boiling water, and season well with pepper and salt. Cook 30 minutes.

Remove loaf from baking pan, add 1 qt. boiling water and stir in tomatoes

and onions. Thicken with 6 oz. flour and season well with salt and pepper or paprika.

Pour gravy over loaf and serve with mashed potatoes.

*Corn-Beef Hash.*

5 lbs. cooked corn beef.  
 7 lbs. potatoes.  
 1 onion.  
 2 teaspoonsful salt.  
 ½ teaspoon pepper.  
 3 cups cream.

Corn beef should be put on in cold water and cooked very slowly for 3 hours the day before needed. Boil potatoes in their skins; peel, chop all together with a meat chopper; add salt, pepper, put in a baking dish and pour cream over top. Bake for ½ hour.

*Creamed Salt Pork.*

3½ lbs. lean salt pork.  
 1 qt. milk.

Roll sliced pork in flour and fry brown; put in stew kettle and continue to fry until all is done, then pour off some of the drippings and brown flour with what is left in pan. When flour is brown pour 1 qt. milk into pan gradually, stirring constantly, and let come to a boil; pour over pork and put back on fire to simmer for 1½ to 2 hours.

*Tomato Sauce.*

- 3 cans tomatoes.
- 2 tablespoons flour.
- 3 tablespoons butter.

Cook the tomatoes for 10 minutes; rub through a strainer. Beat in saucepan until smooth; add 2 tablespoons of flour and 3 tablespoons of butter. Salt and pepper and cook 10 minutes.

This may be served with macaroni, rice, etc., as well as with fish and meats. The flavor may be modified by addition of onions, spices, or herbs.

*Brown Beef Gravy.*

- 4 lbs. beef.
- $\frac{1}{2}$  lb. salt pork.
- 6 oz. onions.
- 4 oz. flour.
- 1 can peas.
- $\frac{1}{2}$  can tomatoes.

Grind beef, salt pork, and onions through food chopper. Season with salt, pepper, and bake until brown. Stir in 4 oz. flour, 1 qt. water, peas, and tomatoes.

Very good with baked or plain boiled potatoes.

**FISH.***Salmon Loaf.*

- 3 cans salmon.
- 3 eggs.
- 2 cups milk.
- Cracker crumbs.

Drain liquor off the salmon. Mince salmon and mix with it the eggs, milk, and cracker crumbs enough to form into a loaf. Bake in a moderate oven until nice and brown.

*Salmon and Rice.*

- 16 oz. rice.
- 2 cans salmon.
- 1 qt. milk.
- 4 oz. butter.
- 6 oz. flour.

Wash well in running water 16 oz. of rice. Cover well with boiling water

to which salt has been added, and cook until flaky and tender. Do not stir rice while cooking, turn fire low. When cooked remove from fire and drain in colander.

Remove skin and bone from salmon, put into baking dish, add rice, cover with 1 pt. milk and white sauce and season well with salt and pepper. Put in oven for few minutes until thoroughly heated and serve hot.

*White Sauce.*

Add to butter, slightly heated, the flour, beat until creamy; stir into 3 pts. boiling milk, stirring constantly, so as not to burn or lump, if double boiler is not used.

**CHEESE.***Cottage Cheese.*

- 4 qts. sour milk.

Cream.

Warm and strain milk through cheesecloth; add just enough cream to blend, salt and pepper.

**MISCELLANEOUS STEWS.***Kidney-Bean Stew.*

- 2 lbs. beef.
- 3 lbs. dried kidney beans.
- 1 can tomatoes.
- 4 medium-sized onions.
- 3 lbs. potatoes.

Soak beans in cold water over night. In the morning drain off water and

start to cook at 8 o'clock in enough cold water to cover well. Just as soon as beans get soft, add beef cut in squares, tomatoes, and onions. At 11 o'clock add potatoes diced, thicken with flour, add salt and pepper to taste.



*Vegetable Stew on Toast.*

2 lbs. Scotch dried peas.

1½ lbs. carrots.

1 lb. potatoes.

1 pt. milk.

1 tablespoon butter.

Soak peas in plenty of lukewarm water over night. In the morning drain off water and put on to boil in plenty of fresh water. Boil slowly 3 hours. An hour before serving add diced carrots and potatoes; pint of milk. Just before serving add butter, and season to taste. Serve on toasted bread. A good Friday dish.

*Lentil Stew with Bacon Strips.*

2 lbs. lentils.

2 lbs. potatoes.

1 lb. bacon or 1½ lbs. frankfurts.

4 oz. drippings.

2 oz. onions.

2 cloves garlic.

Salt and pepper.

6 oz. flour.

Soak lentils overnight, put on to boil in morning at 8 o'clock, covering well with water. Put bacon through coarse meat cutter, put in baking pan and fry to light brown. Pour off drippings, add to lentils, also onions and garlic. One hour before serving add potatoes cut into squares. Brown flour in drippings, put with lentils ½ hour before serving.

The garlic gives the stew the flavor of frankfurts, and the children like it just as well. If frankfurts are used instead of bacon, cut in small pieces.

*Carrot Stew.*

6 oz. onions.

3 lbs. carrots.

3 lbs. tomatoes.

8 oz. rice.

1 stalk celery.

Saute the onions in two table-spoons drippings. Put carrots through coarse knife of food chopper; add to

the onions, then add boiling water enough to make sufficient amount of soup when carrots are done. Add rice and cook slowly till done, 1½ hours. Season with salt and pepper.

*Baked Pork and Beans.*

5 lbs. navy beans.

2 lbs. salt pork.

6 oz. molasses.

Salt.

Paprika.

Wash and soak beans overnight. Boil on slow fire 3 hours, keeping well covered with water. Slice salt pork, add molasses, salt, and paprika. Place in oven and bake 1½ hours.

*Baked Macaroni and Spaghetti.*

2½ lbs. macaroni or spaghetti.

½ lb. salt pork.

1 onion.

½ teaspoon salt.

½ lb. cheese.

2 cans tomatoes.

½ teaspoon celery salt.

½ teaspoon pepper.

½ teaspoon paprika.

1 teaspoon sugar.

Boil macaroni or spaghetti in salted water about 45 minutes; rinse in cold water; add ground salt pork, cheese chipped fine. Boil tomatoes; add diced onion, salt, celery salt, pepper, paprika, and sugar; boil slowly about ½ hour. Place macaroni in baking dish, add salt pork, cheese, and tomatoes and bake about one hour.

*Spaghetti with Tomato Sauce.*

3 lbs. spaghetti.

2 cans tomatoes.

4 oz. onions.

2 cloves garlic.

½ lb. bacon strip or salt pork.

Paprika.

Boil spaghetti in plenty of boiling salted water for 20 minutes, rinse in cold water. Put in baking dish. Fry salt pork and onions, also garlic to a

light brown. Put tomatoes in stew pan. Boil until cooked through; strain and add salt pork, onions, and seasoning. Bake one hour in hot oven.

To make another dish, add  $\frac{1}{2}$  lb. of cheese to spaghetti.

For a Friday dish, omit bacon or salt pork; use  $\frac{1}{2}$  lb. butter instead.

### VEGETABLES.

#### *Scalloped Potatoes.*

7 lbs. potatoes.

Onion.

Milk.

Boil potatoes with jackets on. Peel and slice in pudding dish. Cover potatoes with milk; add grated onion; season and bake in hot oven one hour.

A nice addition is  $\frac{1}{2}$  lb. grated cheese sprinkled over top about 15 minutes before taking out of oven.

#### *Carrots and Peas.*

10 oz. diced carrots.

2 cans peas.

1 qt. milk.

3 oz. flour.

Cook carrots  $\frac{1}{2}$  hour, add peas, milk, flour, and salt.

#### *Cabbage Salad.*

2 $\frac{1}{2}$  to 3 lbs. cabbage.

1 egg.

1 spoon mustard.

$\frac{1}{2}$  cup salt.

1 tablespoon sugar.

1 tablespoon flour.

Butter size of egg.

$\frac{1}{2}$  cup vinegar.

$\frac{1}{2}$  cup water.

Mix mustard, salt, sugar, and flour together until free of lumps; add egg well beaten, vinegar, and water. Put in double boiler to thicken, stirring all the time, adding butter. When used, thin with cream. Put cabbage through grinder, mix with dressing, serve on plates with baked beans.

### CAKES AND HOT BREADS.

#### *Pumpkin Cakes.*

$\frac{1}{2}$  cup butter.

1 cup sugar.

2 eggs.

1 cup molasses.

2 cups strained pumpkin.

1 cup sour milk.

1 teaspoon soda.

1 teaspoon cinnamon, cloves.

Ginger and lemon extract.

3 cups flour.

Beat well; bake in muffin tins in a slow oven about 45 minutes. Makes 30 cakes.

#### *Ginger Bread.*

$\frac{1}{2}$  cup butter or good drippings.

1 cup sugar.

1 cup molasses.

1 cup sour milk.

1 teaspoon soda.

2 $\frac{1}{2}$  cups flour.

Bake in slow oven  $\frac{1}{2}$  hour.

#### *Ginger Cake.*

$\frac{1}{2}$  cup butter or half lard or drippings and half butter.

1 cup molasses.

1 cup sugar.

1 rounded spoon ginger.

1 rounded spoon cinnamon.

1 cup sour milk.

2 spoons baking soda, dissolved in 2 tablespoons warm water.

3 cups flour, well sifted.

2 eggs, well beaten.

Pinch of salt.

Have bake tins well greased and bake in slow oven for  $\frac{1}{2}$  hour. Always grease tins with lard, as grease with salt will make cake stick to tins.

#### *Cornmeal Gems.*

2 cups cornmeal.

2 cups flour.

2 cups sour milk.

$\frac{1}{2}$  teaspoon baking soda.

2 eggs.

Bake in a moderate oven 25 minutes.

*Oatmeal Cookies.*

5 cups rolled oats.  
 2 cups sour milk.  
 Soak overnight and add—  
 1 cup molasses.  
 1 teaspoon soda.  
 1 teaspoon salt.  
 5 eggs.  
 1½ cups flour.  
 Bake in moderate oven.

*Bran Muffins.*

2 cups bran.  
 1 cup white flour.  
 1 cup sour milk.  
 ½ teaspoon baking soda.  
 1 egg.  
 1 small cup molasses.  
 Teaspoon salt.  
 Bake 45 minutes.

**DESSERTS.***Baked Rice.*

½ lb. rice.  
 8 oz. sugar.  
 ½ teaspoon cinnamon.  
 ½ teaspoon salt.  
 2½ qts. milk.

Wash rice well in several waters, put in pudding dish, add sugar, salt, and cinnamon, then milk, *cold*. Bake in moderate oven 2 hours.

The addition of 2 eggs well beaten and 6 oz. of raisins will make a richer pudding.

*Farina.*

7 oz. farina.  
 8 oz. sugar.  
 2 eggs.  
 2 spoonfuls vanilla.

Put milk in double boiler to heat. When hot pour in farina, stirring so it will not lump. Let cook 15 to 20 minutes. Beat up eggs and add to farina. Take from stove, add sugar and vanilla, stirring well.

*Tapioca Pudding.*

2 qts. milk.  
 6 oz. minute tapioca.  
 3 eggs.  
 8 oz. sugar.  
 1 teaspoon vanilla.

Put the milk in double boiler until it comes to the scalding point; stir

in the tapioca, stirring well for 10 minutes; beat together the eggs, sugar, vanilla, and a little nutmeg; beat into tapioca until light. This will serve 30 people.

*Dried Fruits.*

2 lbs. dried fruit.  
 12 oz. sugar.

Wash the fruit and soak in cold water 24 hours. Drain thoroughly, cover with boiling water, and simmer until fruit is tender. Add sugar a few minutes before done. Peaches, prunes, apricots, apples, loganberries, or raisins may be cooked this way. Apples combine well with any of the above fruits except loganberries.

*Cocoa Pudding.*

3 qts. milk.  
 3 oz. cocoa.  
 5 oz. cornstarch.  
 Sugar.

Three qts. of milk in double boiler, add sugar to taste; dissolve three oz. of cocoa in enough boiling water to make it smooth. Add this to the boiling milk. Thicken with 5 oz. cornstarch made smooth with milk. Cook 30 minutes. Flavor with vanilla. Serve cold with cream and sugar.

## APPENDIX D.

### LIST OF CHICAGO MENUS, MATERIALS USED, AND THEIR COST.

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**Morning lunch—Cocoa, bread, jelly.**

**Noon dinner—Browned beef stew, boiled potatoes, mashed turnips, bread and milk, farina pudding.**

***Material used:***

2 large loaves rye bread.  
3 loaves whole wheat bread.  
8 oz. butter.  
3 oz. cocoa.  
5 oz. farina.  
5 oz. flour.  
8 oz. jelly.  
5 lbs. beef.  
22 qts. milk.  
12 oz. onions.  
11½ lbs. potatoes.  
18 oz. sugar.  
5 lbs. turnips.

***Number served:***

30 children.  
2 attendants.  
Per capita caloric value, 1,002.  
Per capita estimated cost, 10½ cents.

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**Morning lunch—Cocoa, raisin bread.**

**Noon dinner—Baked lima beans, cabbage salad, apple sauce, bread and milk.**

***Material used:***

4½ lbs. lima beans.  
2 large loaves rye bread.  
2 large loaves raisin bread.  
8 oz. butter.  
3 oz. cocoa.  
5 lbs. fresh apples.  
22 qts. milk.  
18 oz. sugar.  
1 can tomatoes.  
4½ lbs. cabbage.

***Number served:***

30 children.  
2 attendants.  
Per capita caloric value, 1,031.  
Per capita estimated cost, 9 cents.

Morning lunch—Milk, bread, jelly.

Noon dinner—Browned beef and gravy, baked potatoes, bread, milk, tapioca pudding.

**Material used:**

4 large loaves white bread.  
2 eggs.  
8 oz. flour.  
1 lb. jelly.  
4½ lbs. chopped beef.  
23 qts. milk.  
4 oz. onions.  
9 lbs. potatoes.  
8 oz. sugar.  
5 oz. tapioca.

**Number served:**

30 children.  
2 attendants.  
Per capita caloric value, 1,233.  
Per capita estimated cost, 11½ cents.

Morning lunch—Milk, bread, jelly.

Noon dinner—Milk, bread, kidney bean stew, cabbage salad, apricot sauce.

**Material used:**

2 lbs. kidney beans.  
8½ small loaves white bread.  
2 oz. cornstarch.  
1 lb. apricots.  
3 oz. flour.  
6 oz. jelly.  
3 lbs. beef.  
20 qts. milk.  
8 oz. onions.  
4½ lbs. potatoes.  
8 oz. sugar.  
1 can tomatoes.  
4½ oz. cabbage.

**Number served:**

25 children.  
2 attendants.  
Per capita caloric value, 1,097.  
Per capita estimated cost, 9½ cents.

Morning lunch—Milk, bread, apple butter.

Noon dinner—Milk, bread, spaghetti with tomatoes, apricots.

**Material used:**

6 large loaves white bread.  
1 lb. apricots.  
1 lb. apple butter.  
6 oz. bacon.  
22 qts. milk.  
3 oz. onions.  
2½ lbs. spaghetti.  
12 oz. sugar.  
2 cans tomatoes.

**Number served:**

30 children.  
2 attendants.  
Per capita caloric value, 1,014.  
Per capita estimated cost, 9½ cents.

Morning lunch—Cocoa, raisin bread.

Noon dinner—Milk, bread, vegetable soup with macaroni, baked rice.

**Material used:**

4 small loaves raisin bread.  
 8 large loaves white bread.  
 1 lb. carrots.  
 5 oz. cocoa.  
 8 oz. macaroni.  
 2 lbs. beef.  
 4 oz. onions.  
 8 oz. rice.  
 14 oz. sugar.  
 1 can corn.  
 1 lb. celery.  
 12 oz. cabbage.  
 20 qts. milk.

**Number served:**

25 children.  
 2 attendants.  
 Per capita caloric value, 1,070.  
 Per capita estimated cost, 9½ cents.

Morning lunch—Cocoa, bread, sirup.

Noon dinner—Pea and barley soup, bread, butter, milk, stewed peaches.

**Material used:**

1 lb. barley.  
 3 large loaves rye bread.  
 3 small loaves whole wheat.  
 8 oz. butter.  
 4 oz. cocoa.  
 24 oz. peaches.  
 4 lbs. soup bone.  
 20 qts. milk.  
 8 oz. onions.  
 1 lb. dried peas.  
 20 oz. potatoes.  
 4 oz. rice.  
 22 oz. sugar.  
 8 oz. sirup.  
 1 can tomatoes.

**Number served:**

30 children.  
 2 attendants.  
 Per capita caloric value, 993.  
 Per capita estimated cost, 9 cents.

Morning lunch—Cocoa, bread, jelly.

Noon dinner—Browned beef stew, noodles, bread, butterine, milk, prunes.

**Material used:**

2 large loaves rye bread.  
 2 small loaves whole wheat.  
 8 oz. butter.  
 4 oz. cocoa.  
 24 oz. prunes.  
 4 oz. flour.  
 8 oz. jelly.  
 5 lbs. beef.  
 20 qts. milk.  
 20 oz. sugar.  
 2½ lbs. noodles.

**Number served:**

30 children.  
 2 attendants.  
 Per capita caloric value, 1,048.  
 Per capita estimated cost, 10 cents.

Morning lunch—Cocoa, raisin bread.

Noon dinner—Bolled eggs, mashed potatoes, bread, milk, baked rice pudding.

*Material used:*

2 large loaves rye bread.  
2 large loaves raisin bread.  
4 oz. cocoa.  
3 oz. raisins.  
28 eggs.  
18 qts. milk.  
10½ pounds potatoes.  
20 oz. rice.  
26 oz. sugar.

*Number served:*

25 children.  
2 attendants.  
Per capita caloric value, 1,016.  
Per capita estimated cost, 10 cents.

Morning lunch—Corn-meal mush, cocoa, bread, jelly.

Noon dinner—Beef loaf and gravy, mashed potatoes, bread and milk, sliced bananas.

*Material used:*

3 large loaves rye bread.  
3 small loaves whole wheat.  
8 oz. butter.  
3 oz. cocoa.  
14 oz. corn meal.  
3 oz. flour.  
7 oz. jelly.  
3½ lbs. beef  
20 qts. milk.  
5 oz. onions.  
10½ lbs. potatoes.  
1 lb. sugar.  
2½ lbs. bananas.  
1 can tomatoes.

*Number served:*

25 children.  
2 attendants.  
Per capita caloric value, 1,020.  
Per capita estimated cost, 11 cents.

Morning lunch—Milk, bread, jelly oat meal.

Noon dinner—Milk, bread, beef balls, spaghetti, cottage cheese, chocolate pudding.

*Material used:*

4 small loaves white bread.  
4 large loaves graham bread.  
2 oz. cocoa.  
16 oz. oat meal.  
2 oz. cornstarch.  
8 oz. jelly.  
3 lbs. beef.  
22 qts. milk.  
2 cans tomatoes.  
2 lbs. cottage cheese.

*Number served:*

30 children.  
2 attendants  
Per capita caloric value, 1,000.  
Per capita estimated cost, 9 cents.

Morning lunch—Milk, bread, jelly.

Noon dinner—Milk, bread, browned beef, peas, boiled potatoes, baked apples.

**Material used:**

8 small loaves white bread.  
5 lbs. fresh apples.  
8 oz. jelly.  
4½ lbs. beef.  
20 qts. milk.  
4 oz. onions.  
2 cans peas.  
10 lbs. potatoes.  
8 oz. sugar.

**Number served:**

25 children.  
2 attendants.  
1 physician.  
Per capita caloric value, 1,132.  
Per capita estimated cost, 11½ cents.

Morning lunch—Milk, bread, jelly.

Noon dinner—Milk, bread, creamed salmon, boiled potatoes, cottage cheese, ginger bread, peaches.

**Material used:**

8 small loaves white bread.  
2 oz. butter.  
1½ lbs. peaches.  
2 eggs.  
8 oz. flour.  
10 oz. jelly.  
2 cans salmon.  
24 qts. milk.  
8 lbs. potatoes.  
20 oz. sugar.  
3 oz. molasses.  
3½ lbs. cottage cheese.

**Number served:**

30 children.  
2 attendants.  
Per capita caloric value, 1,000.  
Per capita estimated cost, 9 cents.

Morning lunch—Cocoa, bread, sirup.

Noon dinner—Lamb stew and peas, boiled potatoes, bread and milk, farina pudding.

**Material used:**

2 large loaves rye bread.  
3 small loaves whole wheat.  
8 oz. butter.  
4 oz. cocoa.  
5 oz. farina.  
4 oz. flour.  
6 lbs. lamb.  
20 qts. milk.  
5 oz. onions.  
3 cans peas.  
11 lbs. potatoes.  
20 oz. sugar.  
8 oz. sirup.

**Number served:**

30 children.  
2 attendants.  
Per capita caloric value, 1,045.  
Per capita estimated cost, 12 cents.



Morning lunch—Cocoa, bread, and jam.

Noon dinner—Creamed codfish, boiled potatoes, bread and milk, dates.

*Material used:*

2 large loaves rye bread.  
3 small loaves whole wheat.  
8 oz. butter.  
4 oz. cocoa.  
3 lbs. dates.  
5 oz. flour.  
4 lbs. codfish.  
20 qts. milk.  
11 lbs. potatoes.  
10 oz. sugar.  
8 oz. jam.

*Number served:*

30 children.  
2 attendants.  
Per capita caloric value, 1,002.  
Per capita estimated cost, 10 cents.

Morning lunch—Cocoa, bread.

Noon dinner—Milk, bread, split-pea soup, loganberries.

*Material used:*

5 large loaves white bread.  
5 oz. cocoa.  
8 oz. loganberries.  
8 oz. salt pork.  
4 oz. onions.  
3 lbs. split peas.  
18 oz. sugar.  
18 qts. milk.

*Number served:*

25 children.  
2 attendants.  
Per capita caloric value, 1,045.  
Per capita estimated cost, 9 cents.

Morning lunch—Milk, bread.

Noon dinner—Milk, bread, beef loaf with tomatoes, mashed potatoes, corn.

*Material used:*

5 large loaves white bread.  
3 cans corn.  
2 eggs.  
6 oz. flour.  
4 lbs. beef.  
18 qts. milk.  
2 oz. onions.  
7 lbs. potatoes.  
1 can tomatoes.

*Number served:*

25 children.  
2 attendants.  
Per capita caloric value, 1,105.  
Per capita estimated cost, 11½ cents.

Morning lunch—Milk, bread, syrup.

Noon dinner—Creamed salmon, lyonnaise potatoes, bread, milk, stewed prunes.

**Material used:**

5 large loaves white bread.  
4 oz. butter.  
1½ lbs. prunes.  
8 oz. flour.  
24 qts. milk.  
4 oz. onions.  
9 lbs. potatoes.  
8 oz. sugar.  
1 lb. sirup.  
2 cans salmon.

**Number served:**

30 children.  
2 attendants.  
Per capita caloric value, 1,008.  
Per capita estimated cost, 10 cents.

Morning lunch—Cocoa, raisin bread.

Noon dinner—Cream of tomato soup, bread and milk, cocoa pudding.

**Material used:**

5 small loaves rye bread.  
2 loaves raisin bread.  
8 oz. butter.  
6 oz. cocoa.  
12 oz. cornstarch.  
24 qts. milk.  
20 oz. sugar.  
3 cans tomatoes.

**Number served:**

30 children.  
2 attendants.  
Per capita caloric value, 1,146.  
Per capita estimated cost, 9½ cents.

Morning lunch—Cocoa, bread, jelly.

Noon dinner—Baked beans, beet salad, bread and milk, apple sauce.

**Material used:**

4½ lbs. navy beans.  
2 large loaves rye bread.  
3 small loaves whole wheat bread.  
8 oz. butter.  
3 oz. cocoa.  
5 lbs. fresh apples.  
8 oz. jelly.  
20 qts. milk.  
22 oz. sugar.  
1 can tomatoes.  
6 lbs. beets.

**Number served:**

30 children.  
2 attendants.  
Per capita caloric value, 1,063.  
Per capita estimated cost, 9½ cents.

## APPENDIX E.

### SUGGESTIONS FOR OPEN-AIR CLASSES.

Boston Public Schools, Superintendent's Office, November 5, 1913.

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*Object.*—The primary object of open-air classes is to better the health of the pupils. This should not be interpreted to mean, however, that mental work, school discipline, or school programs, planned for the average normal child, should be set aside completely; neither is such a course necessary.

*Type of child.*—The physically debilitated child, for whom the open-air class is created, is capable of much mental work if the mental work is judiciously adjusted with the decreased or impaired physical asset of the child. This is not always possible in the regular-grade classroom, even when the conditions of fresh air, sunshine, and curriculum approximate those advocated for open-air classes. Hence the need of special classes for the debilitated children who are not ill to a degree sufficient to make hospital or home treatment necessary, but who are, nevertheless, in such a lowered physical state that the routine classroom program is unprofitable both mentally and physically.

*Not for tuberculous children.*—These pupils are not tuberculous, and every effort should be made to have the parents and teachers understand that open-air classes are not for tuberculous children. Tuberculous children are best cared for in special hospital schools.

*Admission to classes.*—Pupils shall be regularly admitted to open-air classes by the principal of the school, subject to the approval of the director of school hygiene (section 391).

Principals of schools in districts where open-air classes are authorized, or principals of schools where, in the opinion of the school physician, such classes should be established, should submit to the director of school hygiene a list of pupils for assignment to open-air classes.

*Organization of classes.*—The number of pupils to assign to each open-air class is 36.

Classes may be organized with one grade of pupils or with two or three grades of pupils.

No pupil shall be assigned to an open-air class without consultation with the parent or guardian.

#### FRESH-AIR ROOMS.

In school buildings having rooms constructed for open-air classes, but in which there is not a sufficient number of debilitated children for the formation of such classes, said rooms shall be utilized as fresh-air rooms (Order of School Committee, May 5, 1913).

These fresh-air rooms might be used advantageously by special classes (mentally defectives).

## CLASSROOM TEMPERATURE.

The regulations of the school committee provide that no room temperature shall exceed 67 degrees.

The regulations further provide that the windows on one side of each classroom shall be kept *open all the time*; also that at regular periods complete flushing of each classroom and corridor with fresh air, by means of open windows, shall be carried out in each session.

## DAILY PROGRAM.

*Work and rest.*—The underlying principle in the daily school program for debilitated children is to alternate the periods of work and periods of rest. This method gives to both the mental and physical development every possible growth. When kept within physiological limits, a good brain means a good physical state, and conversely, a good physical condition means a healthy brain. This balance is more easily upset the nearer one gets to the minimum of reserve power of either system. The great problem, therefore, for a teacher to solve is that of each child's physical and mental capacity. This is essentially an individual problem; it is not dependent solely upon chronological age, nor sex, nor grade, nor upon social condition and environment; neither is it based upon any supposed factors of heredity.

*Attention and concentration.*—There is, perhaps, no better index of mental overwork than that furnished by lack of attention and failure of concentration. A teacher who is able to perceive the presence of either of these factors is possessed of the key to both successful teaching and the maintenance of healthful child development.

*Signs of fatigue.*—The chief signs of fatigue are excitability, irritability, slow sense of perception, inattention, restlessness, shifting of position and posture, repeated failure on familiar problems.

## METHODS OF TEACHING.

*Arithmetic.*—This subject has a great mental strain content and should be taught at periods following rest. The best period for this subject, in the daily program, seems to be between 9 and 10 o'clock a. m. The fatigue strain is increased greatly by combining written arithmetic with oral.

In open-air classes every advantage should be taken of teaching arithmetic by means of measurements, i. e., large measurements in lower grades (1, 2, and 3) more minute measurements in higher grades. This work should be done, as far as practicable, by means of games and plays, competition, i. e., scoring, measuring between points out of doors, etc.

The mental strain of arithmetic can be reduced greatly by using muscular sense rather than visual sense, especially in written arithmetic, e. g., black-board work and exercises in counting, addition, subtraction, multiplication, division, incidental to exercise, games, and plays.

Mental arithmetic should not follow a lesson in history, writing, drawing, or sewing.

*Writing and drawing.*—These subjects should be taught, in the earlier grades, by means of large muscular movements rather than through the sense of sight. This should be done by large shoulder movements in forearm work on black-board. The progression in drawing and in writing should be from the oblique straight lines to the ellipses, to the circles, and then to the vertical or horizontal strokes from which elements, squares, rectangles, and curves can be



to acquaint the parent or guardian with the aims and purposes of the class and to give the necessary instruction relative to the home care of the child, especially on questions of proper food, hours of sleep, fresh air in the home, etc.

*Luncheons.*—Much debility is created among children in the lower grades on account of the radical transformation in their mode of life—home life to school life. So far as possible, children in the lower grades, whether or not in the open-air classes, should be encouraged to bring from home a suitable luncheon. The school nurses have been instructed as to the best articles of food to recommend to the parents for these luncheons.

In the open-air classes opportunity should be afforded for each child to purchase, at a cost not exceeding 2 cents daily, a glass of milk, a hot drink—cocoa, chocolate, broth, or chowder. This is to be in addition to the luncheon brought from home.

*Extra clothing.*—The school committee furnishes blankets for each child assigned to the open-air classes; these blankets are so made that they may be adjusted to children of different sizes. The blankets are thoroughly fumigated by the board of health at the end of each school term. Each blanket should be marked with the name of the child, and all interchanging of blankets, without fumigation, should be guarded against.

*Furniture.*—Movable furniture, of the seat and desk combination, offers many advantages over furniture attached to the floor. In open-air classes in school buildings this furniture can be removed from the center of the room, and space for rest, as well as for games and plays, can be created.

## APPENDIX F.

### LEGISLATION AND COMMITTEE RECOMMENDATIONS.

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Chapter 573 of the Acts of the Legislature of Massachusetts, Session 1913.

**An Act to Authorize Cities and Towns to Provide Free Meals for School Children :**  
*Be it enacted, etc., as follows:*

**SECTION 1.** The city council of a city and the selectmen of a town may provide meals or lunches free or at such price, not exceeding the cost, as they may fix, for children attending its public schools, and cities and towns may appropriate money for this purpose.

**SEC. 2.** This act shall be submitted to the voters of any city or town at the municipal election in any year if a petition to that effect, signed by not less than five per cent of the voters, is filed with the city clerk or town clerk, as the case may be, not less than one month before said election; and if accepted by a majority of the voters thereon it shall take effect in such city or town. Otherwise this act shall not take effect. (Approved May 2, 1913.)

**Section 1509 of the School Code of Pennsylvania :**

*Persons having tuberculosis.*—No person having tuberculosis of the lungs shall be a pupil, teacher, janitor, or other employee in any public school, unless it be a special school carried on under the regulations made for such schools by the commissioner of health.

**Section 1609. Physiology and hygiene. Effect of alcoholic drinks, etc. :**

Physiology and hygiene, which shall in each division of the subject so pursued include special reference to the effect of alcoholic drinks, stimulants, and narcotics upon the human system, and which shall also include special reference to tuberculosis and its prevention, shall be introduced and studied as a regular branch by all pupils in all departments of the public schools of this Commonwealth and in all educational institutions supported wholly or in part by money from this Commonwealth.

**Legislation, Elmira, N. Y. :**

6. The medical inspector shall at the beginning of each school year examine all teachers and janitors of the public schools of the city of Elmira and report the results of such examinations to the board of education.

No person having tuberculosis of the lungs shall be a pupil, teacher, janitor, or other employee in any of the public schools of the city of Elmira, unless it be a special school carried on under the regulations made for such schools by the board of education. (Am. Sch. Bd. Journal, Oct., 1914.)

**Recommendation Made to Massachusetts Senate and House of Representatives by a Commission Appointed by the Massachusetts General Assembly in 1912 :**

The board believes that the question of tuberculosis in children is one of primary importance. This fact has been recognized already by the trustees of hospitals for consumptives through the adoption of the policy of caring for

consumptive children at one institution, the Westfield State Sanatorium, where 60 such children are receiving not only sanatorium treatment but also proper schooling. The board believes such outdoor schooling and treatment for that large class of children who are anemic, under weight, and otherwise predisposed to tuberculosis to be a most important factor in any scheme of prevention. The board, therefore, recommends the further establishment throughout the State of fresh-air rooms and open-air schools for children. Such a plan would, of necessity, require a much more adequate and rigid system of medical school inspection than now exists.

HENRY P. WALCOTT, M. D.,

CLEMENT F. COOGAN,

JOSEPH A. PLOUFF,

JULIAN A. MEAD, M. D.,

HIRAM F. MILLS, C. E.,

ROBERT W. LOVETT, M. D.,

C. E. MCGILLICUDDY,

*State Board of Health.*

DANIEL S. PRENDERGAST,

SYLVIA B. KNOWLTON,

ALBERT C. GETCHEL, M. D.,

ARTHUR DRINKWATER,

GEORGE A. DUNN,

*Trustees of Hospitals for Consumptives.*

JOHN B. HAWES, 2d, M. D.,

*Secretary of Joint Board.*



## APPENDIX G.

### LISTS OF OPEN-AIR SCHOOLS.

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#### CITIES HAVING PUBLIC OPEN-AIR SCHOOLS FOR PHYSICALLY SUBNORMAL CHILDREN—SUPERINTENDENTS.

California: San Francisco	Superintendent of schools.
Colorado:	
Boulder	Do.
Denver	Dr. W. H. Smiley, superintendent of schools.
Connecticut:	
Hartford	Thomas S. Weaver, superintendent of schools.
New Britain	S. H. Holmes, superintendent of schools.
New Haven	F. H. Beede, superintendent of schools.
South Manchester	F. A. Verplanck, superintendent of schools.
Waterbury	M. Louise Seymour, Nottingham Terrace.
District of Columbia: Wash- ington	S. E. Kramer, assistant superintendent of schools.
Georgia: Atlanta	L. M. Landrum, superintendent of schools.
Illinois:	
Chicago	Elizabeth McCormick Memorial Fund, 315 Ply- mouth Court.
Jacksonville	H. A. Perrin, superintendent of schools.
Maywood	Superintendent of schools.
Peoria	Do.
Rockford	Do.
Indiana:	
Fort Wayne	Do.
Indianapolis	Do.
Gary	Dr. O. B. Nesbitt, school physician.
Anderson	Superintendent of schools.
Iowa:	
Des Moines	Do.
Dubuque	Do.
Kentucky:	
Lexington	Do.
Louisville	Miss Carleen E. Proehl, principal of open-air school.
Maryland: Baltimore	Francis A. Soper, superintendent of schools.
Massachusetts:	
Boston	Dr. Thomas F. Harrington, director school hygiene.
Cambridge	Frank E. Parlin, superintendent of schools.
Canton	John C. Davis, superintendent of schools.
Chelsea	Frank E. Parlin, superintendent of schools.
Holyoke	Francis McSheny, superintendent of schools.
New Bedford	Allen P. Keith, superintendent of schools.
Springfield	James H. Van Sickle, superintendent of schools.
Winchester	Schuyler F. Herron, superintendent of schools.
Worcester	H. P. Lewis, superintendent of schools.
Lynn	Superintendent of schools.

**Michigan :**

Battle Creek-----	W. G. Coburn, superintendent of schools.
Detroit-----	Frank Cody, superintendent of schools.
Flint-----	Superintendent of schools.
Grand Rapids-----	W. A. Greeson, superintendent of schools.
Iron Mountain-----	L. A. Butler, superintendent of schools.
Jackson-----	Superintendent of schools.
Kalamazoo-----	Do.
Lansing-----	J. W. Sexton, superintendent of schools.
Manistee-----	Superintendent of schools.
Menominee-----	John S. Silvernale, superintendent of schools.

**Minnesota :**

Duluth-----	Dr. John H. Andres, medical inspector.
Eveleth-----	B. O. Greening, superintendent of schools.
Minneapolis-----	Dr. C. H. Keene, director of hygiene.
St. Paul-----	Dr. E. A. Meyerding, director of hygiene.

**Missouri :**

Kansas City-----	I. I. Cammack, superintendent of schools.
St. Louis-----	Superintendent of schools.

**Nebraska : Lincoln-----**

Do.

**New Jersey :**

East Orange-----	Do.
Hackensack-----	Do.
Montclair-----	Don C. Bliss, superintendent of schools.
Newark-----	Dr. George E. Holmes, medical inspector.
Orange-----	Superintendent of schools.
Plainfield-----	Henry M. Maxson, superintendent of schools.
Trenton-----	Ebenezer Mackey, superintendent of schools.

**New York :**

Albany-----	Dr. Clinton P. McCord, health director.
Brooklyn-----	James Jenkins, jr., 69 Schermerhorn Street.
Buffalo-----	Superintendent of schools.
Fulton-----	J. R. Fairgrieve, superintendent of schools.
Hornell-----	Superintendent of schools.
Buffalo-----	Do.
New York City-----	Do.
Rochester-----	Do.
Saranac Lake-----	H. V. Littell, superintendent of schools.
Schenectady-----	A. R. Brubacker, superintendent of schools.
Syracuse-----	P. M. Hughes, superintendent of schools.
Utica-----	W. B. Sprague, superintendent of schools.
Yonkers-----	Superintendent of schools.

**Ohio :**

Cincinnati-----	Dr. William H. Peters, chief medical inspector.
Cleveland-----	Dr. E. A. Peterson, medical inspector.
Columbus-----	Superintendent of schools.
Toledo-----	Dr. Porter B. Brockway, medical inspector.

**Oregon : Portland-----**

Superintendent of schools.

**Pennsylvania :**

Allentown-----	F. D. Raub, superintendent of schools.
Bethlehem-----	William G. Cleaver, superintendent of schools.
Erie-----	I. B. Bush, superintendent of schools.
Hazleton-----	David A. Harmon, superintendent of schools.
Philadelphia-----	Dr. Walter S. Cornell, medical director.

**Pennsylvania—Continued.**

Pittsburgh.....	Dr. Thomas W. Grayson, 1102 Westinghouse Building.
Williamsport.....	F. W. Robins, superintendent of schools.
Harrisburg.....	Dr. F. E. Downs, superintendent of schools.
<b>Rhode Island:</b>	
Pawtucket.....	Frank O. Draper, superintendent of schools.
Providence.....	Randall J. Condon, superintendent of schools.
Hoxsie.....	Superintendent of schools.
Virginia: Richmond.....	Dr. N. Y. Ennett, medical director of schools.
<b>Wisconsin:</b>	
Green Bay.....	Superintendent of schools.
Kenosha.....	Mrs. Mary D. Bradford, superintendent of schools.
Milwaukee.....	Dr. George P. Barth, director of hygiene.
Oshkosh.....	Superintendent of schools.
Racine.....	Do.

**OPEN-AIR SCHOOLS OR CLASSES FOR NORMAL CHILDREN—SUPERINTENDENTS.****California:**

Alameda.....	Superintendent of schools.
Alhambra.....	Do.
Bakersfield.....	Do.
Chico.....	Do.
Chula Vista.....	Do.
Coronado.....	Do.
Dehesa.....	Do.
El Cajon.....	Do.
Fresno.....	C. C. Starr, superintendent of schools.
Glendale.....	Superintendent of schools.
La Jolla.....	Do.
Lodi.....	Do.
Long Beach.....	Do.
Los Angeles.....	M. C. Bettinger, superintendent of schools.
Modesto.....	Superintendent of schools.
Monrovia.....	Do.
Normal Heights.....	Do.
Oakland.....	Dr. N. K. Foster, medical director of schools.
Ocean Park.....	Superintendent of schools.
Parlier.....	Do.
Pasadena.....	Do.
Redlands.....	Do.
Riverside.....	Do.
Sacramento.....	Do.
San Bernardino.....	Do.
San Diego.....	Duncan MacKinnon, superintendent of schools.
San Francisco.....	Superintendent of schools.
San Jose.....	D. T. Bateman, superintendent of schools.
Santa Barbara.....	Superintendent of schools.
Tulare.....	Do.
Vallejo.....	Do.
West San Pasquale Dist.	Do.

**Connecticut :**

Hartford----- Superintendent of Schools.

New Haven----- F. H. Beede, superintendent of schools.

**Florida :** Jacksonville----- Superintendent of schools.**Illinois :** Evanston----- Do.**Louisiana :**

New Orleans----- Do.

Shreveport----- Do.

**Maine :** Bangor----- Do.**Massachusetts :**

Boston----- Do.

Canton----- John C. Davis, superintendent of schools.

**New Jersey :**

Camden----- Superintendent of schools.

Montclair----- D. C. Bliss, superintendent of schools.

**New York :**

Allaben----- Superintendent of schools.

Brooklyn----- Do.

New York City----- Do.

Rochester----- Do.

Schenectady----- A. R. Brubacker, superintendent of schools.

**North Carolina :** Asheville-- Superintendent of schools.**Ohio :**

Columbus----- Do.

Dayton----- Do.

**Pennsylvania :** Bethlehem-- William G. Cleaver, superintendent of schools.**Rhode Island :**

Pawtucket----- Frank O. Draper, superintendent of schools.

Providence----- Dr. Ellen A. Stone, superintendent of child hygiene.

**South Carolina :** Columbia-- Superintendent of schools.**Virginia :** Williamsburg---- Do.**Washington :**

Everett----- Do.

Seattle----- Do.

**PRIVATE OPEN-AIR SCHOOLS—SUPERINTENDENTS.****California :**

Alameda—The Glen Taylor School----- Mrs. Esther Taylor, principal.

Ben Lomond—Sun Haven ----- Miss Jullane Wolters, principal.

Berkeley—The Claremont Heights Out-  
of-Door School. Miss Elizabeth Place, principal.

San Diego—Francis W. Parker School--- Principal of school.

**Connecticut :**Hartford—Miss Wheeler's School----- Miss Mary Pomeroy Wheeler,  
principal.New Haven—The Misses Lums' Open-  
Air School. Principal of school.**District of Columbia :** Washington—Oak Crest  
Open-Air School, 4606 Thirteenth Street. Margaret Raymond Paine, prin-  
cipal.**Florida :** Jacksonville—The Florida Open-  
Air School. Mrs. Langdon Caskin, director.**Georgia :** Atlanta—Washington Seminary, Principal of schools.  
Peachtree Street.

**Illinois :**

Chicago—The Jewish Training School— Joseph L. Bache, superintendent.

Chicago—The Loring School, Kindergarten. Mrs. Stella Loring, principal.

Chicago—The Orthogenic School, 620 South Hermitage Avenue. Principal of school.

Maine : Oasco—The McAuliffe Outdoor School for Boys. F. J. McAuliffe, principal of school.

**Maryland :**

Baltimore—The Calvert School (for boys) — Principal of school.

Baltimore—3104 Walbrook Avenue— Mrs. A. K. Bond.

Roland Park—Roland Park Country School. Principal of school.

Masachusetts : Boston—Miss Elizabeth J. Woodward's School. Do.

New Jersey : Summit—Open-Air Kindergarten, affiliated with Kent Place School. Miss Maud Mueller, principal.

**New York :**

Albany—St. Agnes' school— Principal of school.

Allaben, Ulster County—The Mountain School for Boys. Do.

Brooklyn—Friends' School— Do.

Brooklyn—Brooklyn Heights Seminary, 18 Pierrepont Street. Do.

Buffalo—The Park School, Jewett Place corner Main. Mary Hammett Lewis, principal.

New York—Ethical Culture School, Central Park West and Sixty-third Street. Principal of school.

New York City—Horace Mann School, One hundred and twentieth Street and Broadway. Do.

New Rochelle—Mrs. Ada C. Beckwith's Out-of-Door Kindergarten, 85 Sickles Avenue. Do.

Rochester—St. Nicholas Outdoor School— Do.

Syracuse—Mrs. Elizabeth Comstock Robertson's Open-Air Kindergarten, 320 Farmer Street. Do.

Syracuse—Mrs. Rice's Open-Air School— Do.

**Pennsylvania :**

Bryn Mawr—The Phoebe Anna Thorne Open-Air Model School. Prof. Mathilde Castro, director.

Merion—The Merion Country Day School. Gertrude Hartman, principal.

Lansdowne—Open-Air Kindergarten— Principal of school.

Mount Airy—Miss Hill's School, 302 Green Avenue. Do.

Sharon Hill—Rose Outdoor School— George K. Goodwin, principal.

Wayne—Mrs. Hunter's School— Principal of school.

Wilkes-Barre—Wilkes-Barre Institute— Do.

Rhode Island : Providence—Open-Air School, 405 Angel Street. Dr. Helen Cooke, principal.

South Carolina : Columbia—Bon Air School— Principal of school.

## PREVENTORIUMS—SUPERINTENDENTS.

Illinois: Lake Forest—Ridge Farm Preventorium.	Mrs. Frances R. Dickinson, 1518 Astor Street, Chicago.
New Jersey: Farmingdale—Tuberculosis Preventorium for Children.	J. Palmer Quinby, superintendent.
New York: Albany—Preventorium-----	Superintendent.
Rhode Island: Hoxsie—Lakeside Preventorium.	League for the Suppression of Tuberculosis, 55 Eddy Street, Providence.
Ohio: Cleveland—Buckeye Road Fresh-Air Camp.	

## SANATORIUMS AND HOSPITALS.

Connecticut: Wallingford—Gaylord Farm Sanatorium Open-Air School.	Superintendent.
Delaware: Marshalltown—Hope Farm Sanatorium Open-Air School.	Do.
Georgia: Atlanta—Battle Hill Sanatorium Open-Air School--	Do.
Illinois:	
Chicago—Municipal Tuberculosis Sanitarium Open-Air School.	Do.
Oak Forest—Cook County Tuberculosis Hospital Open-School.	Do.
Iowa: Oakdale—Oakdale Sanatorium Open-Air School-----	Do.
Kentucky: Louisville—Waverly Hill Sanatorium Open-Air School.	Do.
Maryland:	
Baltimore—James L. Kernan Hospital and School for Crippled Children.	Do.
Savillasville—Maryland State Sanatorium Open-Air School.	Do.
Massachusetts:	
Boston—Mattapan Consumptives' Hospital Open-Air School.	Do.
Canton—Massachusetts Hospital Open-Air School-----	Do.
New Bedford—Sassaquin Sanatorium-----	Do.
Michigan:	
Detroit—Herman Klefer Sanatorium School-----	Do.
Grand Rapids—Municipal Sanatorium Open-Air School---	Do.
Minnesota: Nopeming—Nopeming Sanatorium Open-Air School.	Do.
Missouri: Mount Vernon—State Sanatorium Open-Air School-	Do.
New Jersey: Glen Gardner—New Jersey State Sanatorium Open-Air School.	Do.
New York:	
Brooklyn—Long Island College Hospital Open-Air School-	Do.
Glen Aberdeen—State Tuberculosis Sanatorium Open-Air School.	Do.
Lake Kushaqua—Stony Wold Sanatorium Open-Air School-	Do.
New York City—Medford Sanatorium Open-Air School---	Do.
New York City—Home Hospital, New York Association for Improving Condition of the Poor, 105 East Twenty-second Street.	Do.

## New York—Continued.

New York City—Sea Breeze Hospital for Children with Tuberculosis of the Bone, New York Association for Improving Condition of the Poor, 105 East Twenty-second Street.	Superintendent.
Otisville—New York City Municipal Sanatorium Open-Air School.	Do.
Perrysburg—J. N. Adams Memorial Hospital Open-Air School.	Do.
Rochester—Iola Sanatorium Open-Air School-----	Do.
Ohio: Cincinnati—Municipal Tuberculosis Hospital-----	Do.
Pennsylvania: Pittsburgh—Tuberculosis Hospital Open-Air School.	Do.
Wisconsin: Wales—State Tuberculosis Sanatorium Open-Air School.	Do.

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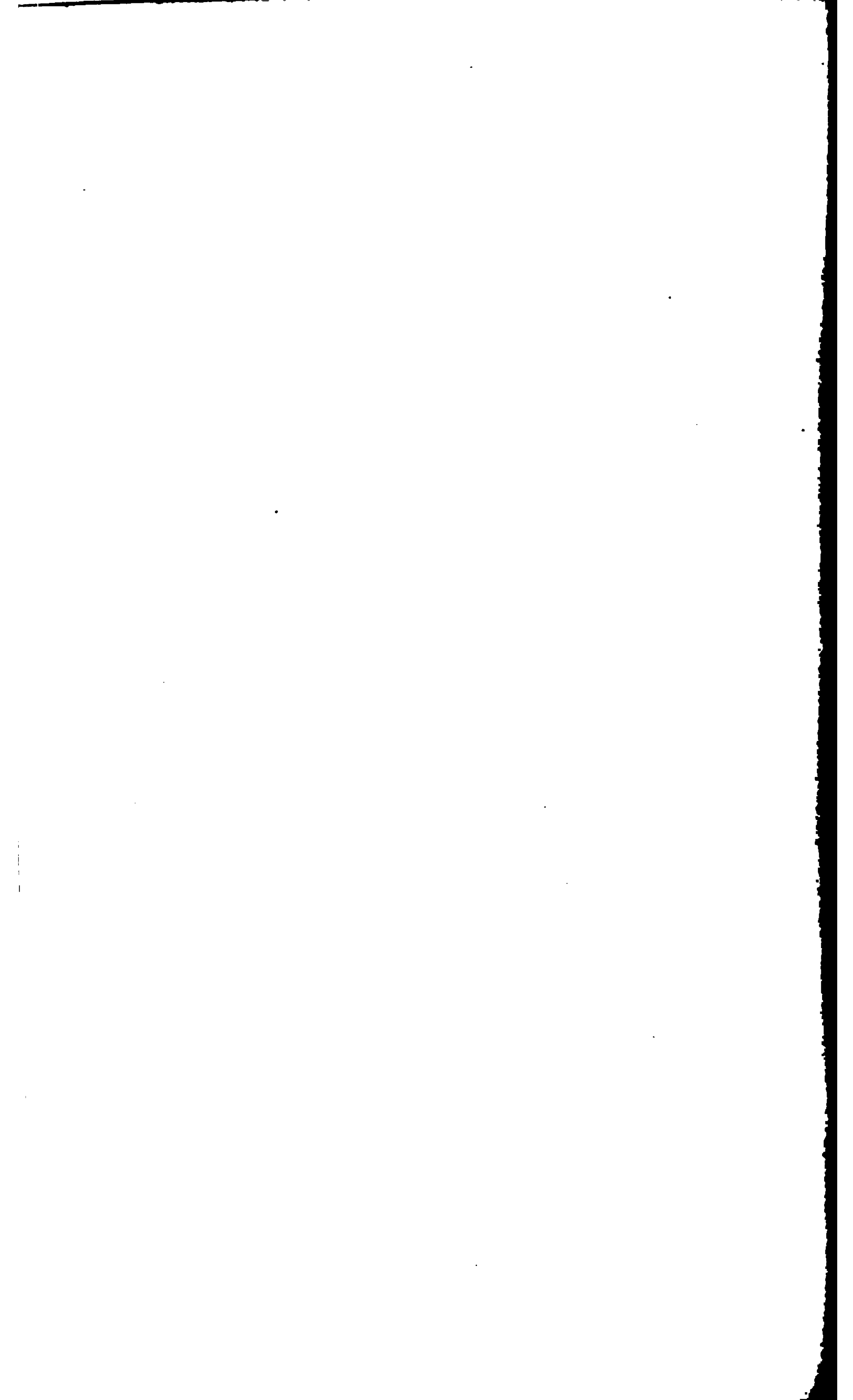
















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OCTOBER, 1916



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## NOTE.

This office can not supply the publications listed in this bulletin, other than those expressly designated as publications of the Bureau of Education. Books, pamphlets, and periodicals here mentioned may ordinarily be obtained from their respective publishers, either directly or through a dealer, or, in the case of an association publication, from the secretary of the issuing organization. Many of them are available for consultation in various public and institutional libraries.

Publications intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

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## PUBLICATIONS OF ASSOCIATIONS.

1091. North central association of colleges and secondary schools. Proceedings of the twenty-first annual meeting . . . held at Chicago, Ill., March 24-25, 1916. Published by the Association, 1916. 246 p. 8°. (Henry E. Brown, secretary, Kenilworth, Ill.)

Contains: 1. T. A. Clark: College and character, p. 5-19. 2. Accredited schools, p. 97-121. 3. David Felmley: What is a reasonable limit to which an institution may go in enrolling students in the first and second years and yet retain the right to be classified as a senior college? p. 130-40. 4. J. S. Brown: The junior high school, the senior high school and the junior college, p. 140-51. 5. J. H. T. Main: No institution of college grade, which offers few advanced courses, should be classified as a senior college, p. 152-58. 6. Committee recommendations regarding the organization and administration of junior high schools, p. 171-74. 7. Digest of the responses to the questionnaire on the junior high school (or intermediate school) p. 174-92. 8. The definition of units, p. 192-229.

1092. **Vermont state teachers' association.** Report of the sixty-sixth annual convention, Rutland, Vermont, October 28-30, 1915. 116 p. 8°. (Etta Franklin, secretary, Rutland.)

Contains: 1. Caroline S. Woodruff: The call of the school, p. 9-12. 2. G. A. Trueman: The use of the Binet-Simon measuring scale for intelligence, p. 31-39. 3. Lillian B. Poor: The kindergarten as the foundation of the elementary school, p. 51-55. 4. Ruth Farr: Story-telling in the primary grades, p. 55-60. 5. Dorothy C. Fisher: An open-air school for normal children, p. 71-74. 6. J. L. McConaughy: The superfluous in education, p. 98-102.

### EDUCATIONAL HISTORY AND BIOGRAPHY.

1093. **Littell, Harold.** Development of the city school system of Indiana—1851-1880. *Indiana magazine of history*, 12: 193-213, September 1916.

To be concluded.

1094. **Memorial service for Miss Blow held in St. Louis.** Kindergarten and first grade, 1: 322-24, September 1916.

Held in the Soldan high school auditorium on May 29.

1095. **Winship, A. E.** Irwin Shepard (Educators as I have known them—XXIV) *Journal of education*, 84: 201-202, September 7, 1916.

### CURRENT EDUCATIONAL CONDITIONS.

1096. **Audollent, Aug.** La guerre et l'enseignement supérieur en France. *Revue internationale de l'enseignement*, 36: 241-53, July-August 1916.

Deals with the service the German universities have rendered that country and shows that the French universities must prepare to use all their power after the war to preserve, defend and perpetuate "la tradition française."

1097. **Bourne, Randolph S.** The Gary public schools. *Scribner's magazine*, 30: 371-80, September 1916.

With an introductory note by William Wirt, director of the Gary schools.

1098. **Brelet, Henri.** L'enseignement secondaire et la réforme de 1902. *Revue internationale de l'enseignement*, 36: 254-79, July-August 1916.

1099. **Cortright, Edward Everett.** Patent medicine formulas in our public school curriculum. *Education*, 37: 20-28, September 1916.

The author states that the present curriculum does not take into account individual differences and so "doesn't and hasn't worked."

1100. **Gilman, Isabel Ambler.** The Alaska school service. *Granite monthly*, 48: 248-55, August 1916.

1101. **McCormick, S. B.** [Educational needs] National association of corporation schools bulletin, 3: 18-21, September 1916.

An address before the fourth annual convention of the National association of corporation schools, defining the agencies that will play an important part in the future developments of the educational system of the United States.

1102. **Marquardt, W. W.** Child welfare work in the Philippines. *Child*, 6: 602-6, September 1916.

1103. **More, Louis Trenchard.** Education and the melting-pot. *Nation*, 103: 229-31, September 7, 1916.

Writer says that American public schools emphasize vocational work above mental discipline, and standardize education down to the needs of the melting-pot, for the assimilation of immigrant children. If this should be continued, the children of the intelligent classes will more and more be sent to private schools, a result which would be unfortunate for the country.

1104. **New possibilities in education**; ed. by Ambrose L. Suhrie. Philadelphia, The American academy of political and social science, 1916. 331 p. 8°. (The annals of the American academy of political and social science. vol. LXVII. Whole no. 156)

CONTENTS.—1. Ambrose L. Suhrie: The educational program of a democracy, p. xi-xxvi. 2. A. Duncan Yocum: Appreciation of music, literature and art as a social aim, p. 1-12. 3. Irving King: Social training through school group activities, p. 13-25. 4. J. Lynn Barnard: Training in the schools for social efficiency, p. 26-33. 5. Edward H. Griggs: The moral training of children, p. 34-39. 6. Carrie A. Lyford: The science and art of home making, p. 40-46. 7. Thomas C. Blaisdell: Education for parenthood, p. 47-53. 8. John M. Brewer: Vocational guidance in school and occupation, p. 54-63. 9. Frederick G. Bonser: Education for life work in non-professional occupations, p. 64-76. 10. B. H. Crocheron: Manual labor and the achievement of national ideals, p. 77-81. 11. Jessie Field: Education for home life on the farm, p. 82-86. 12. John M. Gillette: Training for rural leadership, p. 87-96. 13. Louis W. Rapeer: Health as a means to happiness, efficiency and service, p. 97-106. 14. George E. Johnson: Play and recreation, p. 107-14. 15. J. George Becht: Training children to a wise use of their leisure, p. 115-22. 16. Annie C. Moore: Children, libraries and the love of reading, p. 123-29. 17. L. J. Hanifan: The rural school community center, p. 130-38. 18. Mrs. Frederic Schoff: The National congress of mothers and parent-teacher associations, p. 139-47. 19. Walter L. Phillips: An urban home and school league, p. 148-55. 20. Payson Smith: The rural school improvement league, p. 156-61. 21. L. R. Alderman: School credit for home work, p. 162-66. 22. George E. Vincent: The spread of the school manse idea, p. 167-69. 23. Arthur J. Jones: Continuation schools, p. 170-81. 24. Louis Reber: University extension, p. 182-92. 25. James A. Moyer: The "People's university" of Massachusetts, p. 193-201. 26. Lee Galloway: Correspondence school instruction by non-academic institutions, p. 202-209. 27. Henry M. Leipzig: Education for adults through public lectures in New York city, p. 210-17. 28. Peter W. Dykema: The spread of the community music idea, p. 218-23. 29. Bradford Knapp: Education through farm demonstration, p. 224-40. 30. Mary E. Creswell: The home demonstration work, p. 241-49. 31. Arthur E. Bostwick: The library extension movement in American cities, p. 250-56. 32. Sarah Askew: Library work in the open country, p. 257-66. 33. Ellen C. Lombard: The home reading courses of the United States Bureau of education, p. 267-69. 34. Alfred W. Abrams: Visual instruction in New York state, p. 270-72. 35. H. H. Wheaton: The United States Bureau of education and the immigrant, p. 273-83. 36. William H. Allen: Education through official publicity, p. 284-90. 37. Clyde L. King: The public services of the college and university expert, p. 291-96.

1105. **Rankin, Janet R.** School service in Wisconsin. Educational review, 52: 144-51, September 1916.

Writer says that the new feature in the Wisconsin plan is "its aggressiveness in bringing home to every teacher the fact that the presence of problems and difficulties does not connote inefficiency; that the state desires to aid in transforming difficulties into achievements; and that prompt help may be received for the asking."

1106. **Sargeant, Ide G.** Is the Gary system the panacea for our educational ills? Forum, 56: 323-26, September 1916.

Writer says: "Briefly the Gary plan will reduce the per capita cost for school buildings and for supervision, take care of the children for a longer day through the use of the auditorium, playground, and shop in connection with the special academic subjects, give the child a more attractive and profitable school life, and at the same time provide better facilities for recreation and continuation work for adults."

1107. **Sarraut, Albert.** L'instruction publique et la guerre. Paris, H. Didier, 1916. xxxi, 266 p. 12°.

#### EDUCATIONAL THEORY AND PRACTICE.

1108. **Bowman, Ernest Lavern.** The lesson-plan for inexperienced teachers. Industrial-arts magazine, 5: 377-79, September 1916.



1109. **Furst, Clyde.** Liberal education. *Midland schools*, 31: 7-11, September 1916.

"Liberal education represents a full adjustment of the individual to society, attending alike to body, mind, and spirit."

1110. **Guénot, H.** Contre l'identification des programmes masculins et des programmes féminins. *Revue universitaire*, 7: 118-26, July 1916.

1111. **Henry, T. S.** A comparison of two recent contributions to the theory of education. *School and home education*, 36: 14-17, September 1916.

A review of Dewey's *Democracy and education* and Yocum's *Culture, discipline and democracy*. The author thinks that Yocum's is the more important contribution.

1112. **Wilson, Mrs. Louise Jones.** The average boy and how to teach him. *School news and practical educator*, 30: 41-42, September 1916.

Some suggestions for teachers in dealing with boys in the schoolroom.

### EDUCATIONAL PSYCHOLOGY: CHILD STUDY.

1113. **Cary, Charles P.** Measuring school achievement. *Wisconsin journal of education*, 48: 186-88, September 1916.

The author explains the necessity for scales or standards by which to measure achievement.

1114. **Coxe, Warren W.** The Woolley tests applied to a prevocational class of boys. *School review*, 24: 521-32, September 1916.

1115. **Fordyce, Charles.** Educational measurements. *Middle-west school review*, 9: 17-18, September 1916.

The author gives some of the reasons for having a scale by which to judge the work of pupils.

1116. **Gray, William S.** Descriptive list of standard tests. *Elementary school journal*, 18: 24-34, September 1916.

1117. **Kayfetz, Isidore.** A critical study of the Harvard-Newton composition scales. *Pedagogical seminary*, 23: 325-47, September 1916.

Bibliography: p. 346-47.

1118. **McFarland, W. H.** Relation between spelling judgment and spelling ability. *Midland schools*, 31: 19-21, September 1916.

A study to determine whether "all one needs in order to learn to spell is a spelling conscience and a dictionary habit." The conclusion drawn is that "the 'conscience and dictionary' scheme cannot be relied upon."

1119. **McManis, John T.** The study of the behavior of an individual child; syllabus and bibliography. Baltimore, Warwick & York, inc., 1916. 54 p. 12°.

Bibliography at end of each chapter.

1120. **Scofield, F. A.** Difficulty of Ayres's spelling scale as shown by the spelling of 560 high school students. *School and society*, 4: 339-40, August 26, 1916.

1121. **Shaw, Elizabeth Ross.** A suggestion for child study. *Kindergarten and first grade*, 1: 304-308, September 1916.

Tests given at the Francis Parker School to 5-year-old children. The questions were based on a list standardized by Professor Sommer of Giessen University with the substitution of six questions from the Binet scale.

1122. **Springer, Isidore, ed.** Teachers' year book of educational investigations; a manual giving the tests and standards that have been devised for the purpose of measuring the efficiency of school instruction and administration. Issued by the Division of reference and research, Department of education, the city of New York. 53 p. fold. chart. 8°. (Pub. no. 14)

1123. Studebaker, John W. Spelling; results of an investigation of pupils' ability to spell. New York, Boston [etc.] Newson & company [1916]. 57 p. 8°.

An investigation of the schools of Des Moines, Ia.

1124. Wang, Chang Ping. The general value of visual sense training in children. Baltimore, Warwick & York, inc., 1916. 85 p. illus. 12°. (Educational psychology monographs, no. 15)

Bibliography: p. 81-82.

1125. Woodrow, Herbert. The faculty of attention. *Journal of experimental psychology*, 1: 285-318, August 1916.

1126. Woody, Clifford. Measurements of some achievements in arithmetic. *School and society*, 4: 299-303, August 19, 1916.

1127. Ziedler, Richard. Tests in silent reading in the rural schools of Santa Clara county, California. *Elementary school journal*, 18: 55-62, September 1916.

### SPECIAL SUBJECTS OF CURRICULUM.

1128. Bolenius, Emma Miller. The story in school. *Popular educator*, 34: 38-40, 47, September 1916.

The author gives "(1) information about the story . . . (2) special suggestions . . . (3) devices that enliven work with the short story."

1129. Brawley, Benjamin. The course in English in the secondary school. *Southern workman*, 45: 494-502, September 1916.

A discussion of the English course for negro schools.

1130. Hamm, Franklin P. Outline and suggestive methods and devices on the teaching of elementary arithmetic. Designed to increase the efficiency of teachers of the fifth and sixth years. Also an aid to teachers of succeeding grades in maintaining uniformity in methods and forms throughout the course. Philadelphia, J. B. Lippincott company [1916] 40 p. 16°.

1131. Hauvette, Henri. A propos de l'allemand et de quelques autres langues étrangères. *Revue de l'enseignement des langues vivantes*, 33: 289-96, July 1916.

The author takes issue with those who would stop the teaching of German after the war, claiming that the study of foreign languages keeps a nation in touch commercially and intellectually with foreign countries, and that this is necessary for the welfare of the nation.

1132. Krause, Carl A. The direct method in modern languages; contributions to methods and didactics in modern languages. New York, Chicago [etc.] C. Scribner's sons [1916] 139 p. 12°.

Bibliography of American writers, 1912-14: p. 117-39.

1133. Lewis, G. W. Present methods of teaching primary reading. *Catholic school journal*, 16: 181-88, September 1916.

Short sketch of the various methods but describes especially the Lewis story method.

1134. Mackay, Constance D'Arcy. Festival history and festival ideas for the school. *Popular educator*, 34: 14-15, 58, September 1916.

1135. Norris, F. A. The incidental teaching of English in school shops. *Manual training magazine*, 18: 13-15, September 1916.

1136. Noyer, Ralph. How to judge a debate. *Rural school messenger*, 6: 27-28, September 1916.

Gives an outline which the author has "often found helpful in arriving at a decision."

1137. Sears, Isabel and Diebel, Amelia. A study of the common mistakes in pupils' oral English. *Elementary school journal*, 18: 44-54, September 1916.

Results of an investigation to determine the errors of speech made by Cincinnati school children.

1138. Smith, David E. The development of the American arithmetic. *Educational review*, 52: 109-18, September 1916.

Traces the development of the American arithmetic, particularly with regard to the influences exerted in turn by various European countries. Discusses the influences that will bear upon text books by the junior high school. "This school," says the writer, "offers the most encouragement to mathematics that has been seen in many years."

1139. Sutton, H. O. General science in the high school. *Nebraska teacher*, 19: 24-26, September 1916.

A brief discussion of the reasons for a course in general science, the nature of the course, and the results obtained.

1140. Sypherd, Wilbur Owen. A bibliography on "English for engineers", for the use of engineering students, practicing engineers, and teachers in schools of engineering, to which are appended brief selected lists of technical books for graduates in civil, electrical, mechanical, and chemical engineering. Chicago, New York, Scott, Foresman and company [1916] 63 p. 12°.

Printed on one side of leaf only.

1141. Tatlock, John S. P. Literature and history. *University of California chronicle*, 18: 309-28, July 1916.

The Phi beta kappa address delivered at the University of California, May 16, 1916.

Discusses the historical aspect of literature.

1142. Tryon, R. M. The high school history recitation. *History teacher's magazine*, 7: 236-42, September 1916.

Suggests some methods which a teacher may profitably employ in her attempts to improve the technique of her high-school history recitations.

1143. Walker, Curtis Howe. The sketch-map as an aid in the teaching of historical geography. *School review*, 24: 497-514, September 1916.

A paper read before the High school history teachers' association of Chicago, October 30, 1915, slightly revised.

1144. Whitney, Frederick L. Measuring the value of first grade readers. *American school board journal*, 53: 24, 77-78, September 1916.

### KINDERGARTEN AND PRIMARY SCHOOL.

1145. Aguayo, Alfredo M. La escuela primaria como debe ser. 1 ed. Habana, Imp. "La Propagandista," 1916. 165 p. 12°.

1146. Alder, Louise. Kindergartens in the schools of Kansas. *Kansas teacher*, 3: 5-8, July and August 1916.

History and present status of the kindergarten in Kansas. Kansas ranks "as the 33d state in the union in regard to the number of children enrolled in kindergartens per thousand of population of kindergarten age."

1147. **Bradstreet, Marjora.** A kindergarten upon the Florida keys. Kindergarten and first grade, 1:299-300, September 1916.

Description of a kindergarten at Key West.

1148. **Dobbs, Ella Victoria.** Meeting of National council of primary education. Kindergarten and first grade, 1:309-10, September 1916.

Meeting held July 6, 1916, at New York.

1149. **Hill, Patty S.** Kindergartens of yesterday and tomorrow. Kindergarten-primary magazine, 29:4-6, September 1916.

Paper delivered at the National education association meeting, July 1916.

1150. **Palmer, Luella A.** Practical means of unifying the work of kindergarten and primary grades. Kindergarten point of view. Kindergarten-primary magazine, 29:7-10, September 1916.

### RURAL EDUCATION.

1151. **Benson, P. H.** Rural supervision in a California county. American school board journal, 53:42-43, September 1916.

1152. **Clark, Taliaferro; Collins, George L., and Treadway, W. L.** Rural school sanitation, including physical and mental status of school children in Porter county, Indiana. Washington, Government printing office, 1916. 127 p. illus. 8°. (Treasury department. U. S. Public health service. Public health bulletin no. 77)

1153. **Fairview's hired man.** Rural school messenger, 6:7-23, September 1916.

"A humorous story of real progress [in a rural school] supposedly told by a conservative farmer. From the Saturday evening post."

1154. [**Williams, Henry G.**] A course of study for rural schools. Ohio teacher, 37:4-5, August 1916.

Gives some features of the redirected rural school. The course of study will be published in the September issue.

1155. **Williams, J. Harold.** Reorganizing a county system of rural schools. Report of a study of the schools of San Mateo county, California. Washington, Government printing office, 1916. 50 p. illus., plates. 8°. (United States. Bureau of education. Bulletin, 1916, no. 16.)

### SECONDARY EDUCATION.

1156. **California high school teachers' association.** Proceedings of the fourth annual convention, Berkeley, July 10-14, 1916. Sierra educational news, 12:1-206, August 1916.

Contains: 1. M. E. Hill: Education for the larger life, p. 9-12. 2. A. F. Lange: The new high school and the new high-school teacher, p. 12-18. 3. W. C. Wood: Effect of recent regulations of the state board of education on the relation of the high school to the normal school, p. 27-37. 4. D. S. Hill: Educational research in public schools, p. 39-48. 5. C. E. Rugh: Moral implications in subjects, activities and government of a modern high school, p. 49-55. 6. J. B. Sears: The legal status and growth of California high schools, p. 55-64. 7. M. E. Deutsch: Where the fastenings are weakest (Latin in high schools) p. 78-86. 8. S. I. Miller, jr.: The teaching of economics in the high school, p. 106-12. 9. A. L. Gould: Can the junior college be made to serve its community primarily and be an end in itself? p. 116-18. 10. W. A. Cooper: Collegiate training of high-school teachers of German, p. 127-34. 11. W. C. Wood: Forming and informing in the rural high school, p. 143-50. 12. A. F. Lange: The reorganization of rural education, p. 155-58. 13. B. H. Paddock: The proposed rural school survey, p. 159-66. 14. R. G. Boone: Some implications of vocational guidance, p. 170-72. 15. J. C. Templeton: Report of the committee on high-school architecture and grounds, p. 178-81. 16. Report of the vocational guidance committee. Progress of vocational guidance in California, and suggestions for its introduction into school systems, p. 190, 193-94, 197-98, 201.

1157. **Abelson, Joseph.** A study of the junior high school project. *Education*, 37: 1-19, September 1916.

1158. **Andrew, William E.** A study in high-school cost of production. *American school board journal*, 53: 12, September 1916.

"Set of standards . . . derived from a study of the official records of seventeen high schools in thirteen counties in Central Illinois."

1159. **Brown, George A.** [Junior high schools] School and home education, 36: 6-8, September 1916.

The author criticizes the junior high school idea unfavorably.

1160. **Gillan, S. Y.** Classifying high-school pupils. *Western teacher*, 25: 9-12, September 1916.

Advocates a plan of organization for high schools which discards the plan of promoting by classes and lets each pupil do as much as he is able to do well, and no more.

1161. **Herrick, Cheesman A.** What high-school studies are of most worth. *School and society*, 4: 305-309, August 26, 1916.

Paper read at the meeting of the Secondary department, National education association, July 4, 1916.

Changes in secondary education, the author states, "should be made with the following as a guiding principle: Those high-school studies are of most worth which are worth most to the individual pupil, which will best fit him for meeting the many-sided demands of the life which he is to live."

1162. **Mooney, William Barnard.** The relation of secondary schools to higher schools in the United States. *Pedagogical seminary*, 23: 387-416, September 1916.

1163. **Nelson, A. M.** The six-six plan in practice. *Wisconsin journal of education*, 48: 197-98, September 1916.

Result of a brief summary made under Professor M. V. O'Shea in his educational seminar at the University of Wisconsin.

1164. **Osborn, William Q.** The story of a big school in a little town. *American school board journal*, 53: 15-17, 76, September 1916.

The Eatonville high school, Eatonville, Washington.

1165. **Reinoehl, F. W.** Some fundamentals of the junior high school problem. *American school board journal*, 53: 19-20, September 1916.

Read at a conference of superintendents and principals of schools at the University of North Dakota, May 18th, 1916.

#### TEACHERS: TRAINING AND PROFESSIONAL STATUS.

1166. **Barnum, Charlotte E.** Systematic guidance for teachers-in-training in the grades. *Pedagogical seminary*, 23: 348-59, September 1916.

States that systematic guidance should be given in the formation of good teaching habits.

1167. A code of ethics for teachers. *American school board journal*, 53: 62-63, September 1916.

Adopted by the New Jersey state teachers' association.

1168. **Deihl, J. D.** Directed teaching and directed observation—a correction and an explanation. *School review*, 24: 515-20, September 1916.

A correction of statements made in an article by John C. Weigel in regard to the training of teachers of German at the University of Wisconsin.

1169. **Furst, Clyde.** Pensions for public school teachers. *American school board journal*, 53: 30-34, September 1916.

Gives the fundamental principles "applicable to all pension systems which involve large groups."

1170. **Mississippi Valley historical association.** Normal school relation to high school teaching. Report of committee, presented at Nashville, April 28, 1916. History teacher's magazine, 7: 244-48, September 1916.

The place of the normal school in preparing high school history teachers.

1171. **The professor of pedagogy—once more.** Unpopular review, 6: 58-72, July-September 1916.

A reply to the defense of the professor of pedagogy in the April Unpopular review (item 667).

1172. **Stoutemyer, J. Howard.** The social status of the teaching profession. Pedagogical seminary, 23: 417-40, September 1916.

Bibliography: p. 439-40.

The conclusion is that the "social status varies directly with the professional training and fitness on the part of the teacher, and adequate return in salary and social esteem on the part of the state."

1173. **Thomas, J. M.** Training for teaching composition in colleges. English journal, 5: 447-57, September 1916.

1174. **Wolfe, A. B.** The graduate school, faculty responsibility, and the training of university teachers. School and society, 4: 423-33, September 16, 1916.

1175. **Young, Walter H.** Effects of unstable tenure of office. Journal of education, 84: 202-205, September 7, 1916.

Unstable tenure is shown to be one of the greatest hindrances to the progress of education.

### HIGHER EDUCATION.

1176. **Bovingdon, John.** Can we improve upon the college lecture system? School and society, 4: 393-97, September 9, 1916.

The lecture system, since it does not meet the demands made upon education by the state, namely, teaching the pupil how to make decisions by himself and with others, should be abandoned for the discussion method, which provides "an environment more conducive to the training which life requires of men."

1177. **Britton, N. L.** The New York botanical garden and Columbia university. Columbia university quarterly, 18: 352-59, September 1916.

Describes the agreement for coöperative educational facilities between the Garden and the University.

1178. **Brush, H. B.** The junior college and the universities. School and society, 4: 357-65, September 2, 1916.

Paper read before the Faculty club of the University of North Dakota, February, 1916.

The author claims that the junior college will have a beneficial effect on universities by taking care of a class of student which the university cannot benefit.

1179. **Clark, Charles Upson.** What are colleges for? North American review, 204: 413-20, September 1916.

Discusses the effects upon college education of the elective system, the vocational movement, and extra-curriculum activities, and suggests raising the standards by a revised course of studies.

1180. **The College art association of America.** School and society, 4: 334-37, August 26, 1916.

Report of the committee appointed to investigate the condition of art instruction in universities and colleges of the United States.

1181. **Gildersleeve, Virginia C.** The purpose of college Greek. Educational review, 52: 174-82, September 1916.

1202. Heck, William H. Correlation between amounts of home study and class marks. *School review*, 24: 533-49, September 1916.

1203. Hunter, Fred M. The socialized recitation. *Nebraska teacher*, 19: 30-32, September 1916.

1204. Jones, Adam L. Comprehensive examinations. *Educational review*, 52: 166-73, September 1916.

Says that "comprehensive examinations unintelligently administered would be productive of as great harm as 'piecemeal' examinations similarly administered."

1205. Lovett, A. J. The school program. *Oklahoma journal of education*, 6: 2-4, September 9, 1916.

1206. McAndrew, William. Our old friend, the examination. *American education*, 20: 15-18, September 1916.

Address before the secondary school section of the National education association.

### SCHOOL HYGIENE AND SANTITATION.

1207. Ashcraft, F. E. School hygiene is race hygiene. *Associate teacher*, 18: 19-21, September 1916.

A plea for more thorough medical inspection of school children.

1208. Greeg, F. M. The most essential school subject. *Middle-west school review*, 9: 15-16, September 1916.

The author considers hygiene the most essential subject.

1209. Sundwall, John. Organization and activities of a university health service. *School and society*, 4: 343-51, September 2, 1916.

"It is the purpose of this communication to outline a plan of organization which is proving effective in the initiation and maintenance of activities concerned with student health" at the University of Kansas.

### PHYSICAL TRAINING.

1210. Mason, Samuel K. The importance of teaching school children to swim. *American city*, 15: 314-16, September 1916.

Gives the method of cooperation between the Bath department and the School department in Brookline, Mass.

1211. Young, Charles V. P. What American universities are doing. *Physical culture*, 36: 32-38, September 1916.

By the director of physical training, Cornell university.

### PLAY AND PLAYGROUNDS.

1212. Foster, Warren Dunham. Organized recreation. *Pennsylvania school journal*, 65: 61-64, August 1916.

Address before the National education association, New York, July 3, 1916.  
A working plan for organizing recreation in city or country.

1213. Rogers, James E. Report of the recreation conditions and problems of Peoria, with recommendations and suggested system. *Child welfare bulletin*, 4: 147-78, August 1916.



1214. **Starks, Grace Evelyn.** The school playground. *Popular educator*, 34: 35-37, 58, September 1916.

Suggestions for the teacher in a rural school where there is no trained director for the playground.

### SOCIAL ASPECTS OF EDUCATION.

1215. **Flexner, Abraham.** Parents and schools. *Atlantic monthly*, 118: 25-33, July 1916.

1216. **Larson, Ruby P. M.** Entertainments and social events. *Nebraska teacher*, 19: 11-13, September 1916.

Tells how to "create a closer fellowship between the school and the community, to unite them in a common interest."

### MORAL EDUCATION.

1217. **Archer, William.** Knowledge and character. *Educational review*, 52: 119-43, September 1916.

An address delivered at the annual meeting of the Moral education league, London, February 6, 1914. Based upon a paper read at a previous session, by Principal Griffiths, of the University of South Wales, which lamented that the present system of education "subordinated the development of character to the acquisition of knowledge."

1218. **Davis, Jesse B.** Recent progress in moral training and instruction in public high schools. *American city*, 15: 288-92, September 1916.

A survey to show how suggestions made by a committee of the Religious education association in 1911 have been carried out.

1219. **Séailles, Gabriel.** L'éducation morale de la démocratie. *Bibliothèque universelle et revue suisse*, 83: 201-24, August 1916.

Writer is a professor in the Sorbonne.

1220. **Stacy, Emma A.** Morning exercises for moral and civic training. *Popular educator*, 34: 9-12, 44, September 1916.

### RELIGIOUS EDUCATION.

1221. **Leo, Brother.** The religious basis of pedagogy. *Catholic school journal*, 16: 169-71, 96, September 1916.

The author examines "some of the ways in which the religious spirit vitally enters into the art of teaching."

1222. **Schoff, Mrs. Frederic.** Spiritual guidance of children: duty of home and church. *Child-welfare magazine*, 11: 18-20, September 1916.

Given at the International training school for Sunday-school leaders. To be continued.

1223. **Shields, Thomas Edward.** Some relations between the Catholic school and the public school system. *Catholic educational review*, 12: 135-46, September 1916.

Paper read at the annual convention of the Catholic educational association, Baltimore, June, 1916.

1224. **Wardle, Addie Grace.** Handwork in religious education. Chicago, Ill., The University of Chicago press [1916] 143 p. illus. 12°.

"Books for reference": p. 136-40.



**MANUAL AND VOCATIONAL TRAINING.**

- 1225. National society for the promotion of industrial education.** Proceedings ninth annual meeting, Minneapolis, January 20-22, 1916. New York City, 1916. 405 p. 8°. (Alvin E. Dodd, secretary, 140 West 42d street, New York City)

With this is bound the Proceedings of Employment managers' conference, held under the auspices of the National society for the promotion of industrial education and the Minneapolis civic and commerce association, January 19-20, 1916. Bulletin of the United States Bureau of labor statistics, number 196. 82 p.

Contains: 1. David Snedden: Some predictions as to the future of vocational education, p. 21-40. 2. Lucinda W. Prince: Present accomplishments and some future possibilities in training for department store work, p. 41-49. 3. Sara A. Conboy: Trade union ideals and vocational education, p. 50-56. 4. The Minneapolis survey, p. 85-125. 5. W. H. Henderson: Report of Minneapolis survey on trade agreements, p. 129-35. 6. F. D. Crawshaw: Report of survey on private schools giving industrial education, p. 136-40. 7. L. H. Carris: The county unit plan in the development of vocational education, p. 141-45. 8. W. E. Clark: The relation of the industrial teacher to the labor and manufacturing interests of the community, p. 146-53. 9. H. A. Hutchins: Publicity methods or the advertising of evening vocational schools, p. 154-63. 10. H. S. Schnell: Evening school organization and administration, p. 164-72. 11. Anna M. Cooley: The training of the teacher of household arts for the vocational school, p. 182-86. 12. Mrs. H. M. Hickok: Business of home-making, p. 187-95. 13. W. E. Hicks: A description of the continuation schools of Wisconsin, p. 203-11. 14. Violet Coen: Shop methods and the utilization of product, p. 215-19. 15. Florence M. Marshall: Trade extension and part-time courses for girls in New York city, p. 220-25. 16. Sara A. Conboy: The value of the trade union movement to industrial education and wage workers, p. 283-86. 17. W. H. Henderson: The Wisconsin plan, p. 237-41. 18. C. R. Allen: The Massachusetts plan for the training of teachers for vocational schools, p. 242-46. 19. S. S. Edmonds and W. A. O'Leary: What Pratt institute is doing to train teachers of trades, p. 249-60. 20. M. W. Murray: Broadening the training of industrial teachers in the service by industrial employment during vacation, p. 265-70. 21. Antoinette Roof: Provision for commercial experience during the period of training, p. 271-77. 22. H. W. Schmidt: Commercial shop experience for teachers, p. 281-88. 23. G. A. Works: Apprentice teacher training, p. 291-301. 24. A. C. Monahan: The status of teacher-training for agriculture in the United States, p. 302-305. 25. C. G. Selvig: The home project as the center vs. the home project as the outgrowth of agricultural instruction, p. 306-11. 26. L. S. Hawkins: Plans and records of home project instruction, p. 312-24. 27. R. C. Keople: The relation of the pre-vocational school to the rest of the school system, p. 325-34. 28. F. V. Thompson: Problems of industrial education under public administration, p. 337-46. 29. G. E. Barnett: Trade agreements and industrial education, p. 347-61. 30. A. S. Hurrell: How the high school can best serve industrial education, p. 366-73. 31. Cleo Murtland: Recommendations of the survey on women's work, p. 374-83.

- 1226. Colegrove, C. P.** The educative value of manual training. West Virginia school journal and educator, 45: 182-83, September 1916.

The author maintains that the educative value of manual training is proved by testing it by three fundamental principles of education.

- 1227. Indlekofer, John N.** Cultural phases of vocational training. Manual training magazine, 18: 5-7, September 1916.

- 1228. Johnston, Charles H.** Public instruction and public training. Educational review, 52: 152-65, September 1916.

Discusses various phases of vocational instruction as presented by the Cooley bill and Teachers' substitute bill, proposed in Illinois as legislative solutions of industrial education.

1229. **Leonard, R. J.** Research for purposes of vocational education in Indiana. *School and society*, 4: 272-79, August 19, 1916.

The Indiana state board of education has appropriated funds for vocational research. The question of the scope of the problems to be studied and the methods of study are considered by the writer.

1230. **Redfield, William C.** Industrial education. *American education*, 20: 12-14, September 1916.

Address delivered at the general session of the National education association, New York city, July 3, 1916.

1231. **Snedden, David.** Vocational education in Massachusetts; some achievements and some prospects. *Manual training magazine*, 18: 1-4, September 1916.

Notes of an address given at a Conference of vocational school teachers, Worcester, Mass., May 26th, 1916.

1232. ———. What is vocational education? *West Virginia school journal and educator*, 15: 188-89, September 1916.

### VOCATIONAL GUIDANCE.

1233. **Bess, Elmer Allen.** Training for vocation. *School and society*, 4: 433-39, September 16, 1916.

Discusses the need of specialists in vocational guidance, their qualifications and duties.

1234. **Bonner, H. R.** Necessity for vocational guidance. *West Virginia school journal and educator*, 45: 190, 204, 206, September 1916.

The author bases his contention on the answers to a questionnaire sent to three high schools in West Virginia.

1235. **Gruenberg, Benjamin C.** What's in a job? *Scientific monthly*, 3: 263-76, September 1916.

By the secretary of the Vocational guidance association of New York, who concludes: "Men and women should rejoice in their work, for that is the most of their life."

### AGRICULTURAL EDUCATION.

1236. **Heald, F. E.** School credit for home practice in agriculture. Washington, Government printing office, 1916. 27 p. 8°. (U. S. Department of agriculture. Bulletin no. 385)

This bulletin is intended to assist superintendents and teachers of rural schools who desire to use home practice in agriculture as an educational feature, giving proper rank and credit on the school records. It may be procured from the Superintendent of documents, Washington, D. C., at 5 cents per copy.

1237. **Meisnest, C. W.** Harvest fairs in county and township schools. *American city* (Town and county ed.) 15: 255-58, September 1916.

1238. **Nolan, A. W.** Going up the road to the country. *School news and practical educator*, 30: 2-4, September 1916.

Initiatory ceremonies for boys' and girls' country life clubs leading to the degree of Master country man, in which Father Wisdom, Master Toil, and Country Gentleman examine the candidates.

**HOME ECONOMICS.**

1239. Henegren, Marie. Household arts and domestic science. Catholic school journal, 16: 190-91, September 1916.
1240. Keen, Charlotte. Home economics in the Detroit schools. Journal of home economics, 8: 479-87, September 1916.
1241. Sellers, Edith. An antediluvian on the education of working-class girls. Nineteenth century and after, 80: 337-49, August 1916.

Says that the English educational system gives too much time to teaching girls how to paint, dramatise, and botanise, and not enough to teaching them how to cook.

**COMMERCIAL EDUCATION.**

1242. Smith, E. Newton. Commercial education. Education, 37: 51-61, September 1916.

"The chief aim of commercial education should be to produce the highest possible degree of efficiency, to increase production, to make a just distribution in commercial labor, to make self-respecting, self-supporting, and contributing members of society, and thereby help in promoting social justice to all mankind."

**PROFESSIONAL EDUCATION.**

1243. Dixon, Brandt V. B. The present status of woman's education with special application to a better nursing education. American journal of nursing, 16: 1072-76, August 1916.

Address at a public meeting of the National league of nursing education, New Orleans, La., May 2, 1916.

1244. Dunning, William B. The Columbia university school of dentistry. Columbia university quarterly, 18: 345-51, September 1916.

Gives besides a description of the school a brief sketch of the growth of dental education.

1245. Hammett, Frederick S. Medical education in chemistry. Medical record, 90: 503-6, September 16, 1916.

Writer says it is lamentably self-evident that the average physician possesses little if any applicable knowledge of chemistry. This condition should be remedied.

**MILITARY TRAINING.**

1246. Schools and preparedness. School, 28: 5, September 7, 1916.

Three letters from principals of secondary schools to the New York Times in answer to its invitation for opinions on the new military training law of the state.

**BOY SCOUTS.**

1247. West, James E. [Boy scouts of America] Midland schools, 31: 11-14, September 1916.

Address at the National education association meeting, July 1916.

**EXCEPTIONAL CHILDREN.**

1248. Hoag, Ernest Bryant. Is your child a misfit? Mother's magazine, 11: 29-30, September 1916.

Give him special guidance. He is worth personal attention and individual training. Many of the world's greatest men have been thought misfits as children because they did not march in time with the public school lockstep.

1249. Koch, Felix J. Teaching the boys and the girls who can't hear. Ohio teacher, 37: 10-12, August 1916.

Interesting public school in the middle west which teaches deaf children.

1250. Morris, Elise. For the children of Nashville 100% efficiency. Mother's magazine, 11: 31-33, September 1916.

Physical, mental, and moral peculiarities are diagnosed, and the deformed, diseased, delinquent, and abnormal receive skilled treatment and individual training, to bring them to maximum efficiency.

1251. Treloar, Sir William. The vocational training of crippled boys: the work of the Lord Mayor Treloar cripples' college at Alton. Child, 6: 591-601, September 1916. illus.

### LIBRARIES AND READING.

1252. Bostwick, Arthur E. General principles involved in high-school library control. Library journal, 41: 646-47, September 1916.

Advocates administration of the school library by the public library.

1253. Budlong, Mrs. Minnie Franklin (Clarke). A plan of organization for small libraries; methods of work, lists of supplies and aids. Rev. ed. [Bismarck, N. Dak.] North Dakota Public library commission, 1916. 65 p. 8°.

1254. Hopkins, Florence M. A plea for the library in public schools. Education, 37: 35-41, September 1916.

1255. Johnston, Charles Hughes. The need for an aggressive campaign for better school libraries. Library journal, 41: 633-39, September 1916.

Also in School and society, 4: 381-88, September 9, 1916.

Address delivered before the joint meeting of the Department of secondary education and the Library department of the National education association, New York city, July 1916.





DEPARTMENT OF THE INTERIOR  
BUREAU OF EDUCATION

BULLETIN, 1916, NO. 25

# COMMERCIAL EDUCATION

A REPORT ON THE  
COMMERCIAL EDUCATION SUBSECTION OF THE  
SECOND PAN AMERICAN SCIENTIFIC CONGRESS  
DECEMBER, 1915-JANUARY, 1916

BY

GLEN LEVIN SWIGGETT

BUREAU OF EDUCATION

MEMBER COMMITTEE ON EDUCATION, NATIONAL FOREIGN TRADE COUNCIL  
UNITED STATES CHAMBER OF COMMERCE

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## LETTER OF TRANSMITTAL

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DEPARTMENT OF THE INTERIOR,  
BUREAU OF EDUCATION,  
*Washington, August 28, 1916.*

SIR: The program of the subsection on commercial education of the education section of the Pan American Scientific Congress, held in Washington City December 27, 1915, to January 8, 1916, was so comprehensive and the papers of such value that I requested Dr. Glen Levin Swiggett, assistant secretary general of the congress and chairman of the committee on commercial education, to prepare these papers for publication as a bulletin of the Bureau of Education. This he has done in such way as to preserve the best of the substance of these papers with as little repetition as possible. Because of the increasing general interest in commercial education in all parts of the country, and especially in the centers of urban population, I recommend that the manuscript transmitted herewith be published as a bulletin of this bureau.

Respectfully submitted.

P. P. CLAXTON,  
*Commissioner.*

The SECRETARY OF THE INTERIOR.



## COMMERCIAL EDUCATION.

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The Second Pan American Scientific Congress convened in Washington, D. C., December 27, 1915, and adjourned January 8, 1916. The congress was held under the auspices of the Government of the United States and was recognized officially by the 21 Governments constituting the Pan American Union, all of which were represented by 111 official delegates.

This congress had its origin in the Latin-American Scientific Congress that was held in Buenos Aires in 1898 under the auspices of the Government of Argentina, on the occasion of the celebration of the Silver Jubilee of the distinguished Sociedad Científica Argentina. Subsequent congresses were held in Montevideo, 1901; Río de Janeiro, 1905; and Santiago de Chile, 1908. The last-named was called the First Pan American Congress owing to the generous invitation extended to the United States and that Nation's participation in the congress.

There has been a remarkable growth of interest in this organization on the part of the Governments and scientific and learned societies of the Western Hemisphere. The first congress emphasized a relatively larger degree of interest in pure science than have the subsequent ones, which have placed an increasingly larger emphasis upon questions bearing on the practical application of science. The latter received a preponderant attention in the Second Pan American Scientific Congress. There were 868 papers presented before this congress. The total membership was 2,566; from the United States, 1,899; from Latin America, 667. The following persons constituted the executive committee and officers of organization:

### *Executive Committee.*

**WILLIAM PHILLIPS**, Third Assistant Secretary of State, chairman *ex officio*.

**JAMES BROWN SCOTT**, Secretary Carnegie Endowment for International Peace, vice chairman.

**WILLIAM H. WELCH**, President National Academy of Sciences, honorary vice chairman.

**JOHN BARRETT**, Director General Pan American Union.

**W. H. BIXBY**, Brigadier General United States Army, retired.

**PHILANDER P. CLAXTON**, Commissioner of Education.

**WILLIAM C. GORGAN**, Surgeon General United States Army.

**WILLIAM H. HOLMES**, Head Curator Smithsonian Institution.

**HENNEN JENNINGS**, former President London Institution Mining and Metallurgy.

**GEORGE M. ROMMEL**, Chief Animal Husbandry Division, Bureau of Animal Industry, Department of Agriculture.

**L. S. ROWE**, President American Academy of Political and Social Science.

**ROBERT S. WOODWARD**, President Carnegie Institution of Washington.

#### *Organization Officers.*

**JOHN BARRETT, LL.D.**, secretary general.

**GLEN LEVIN SWIGGETT, Ph. D.**, assistant secretary general.

The program of the congress was divided into nine main sections, which were in turn subdivided into 45 subsections. The program of each subsection was in charge of an officially appointed committee. The Commissioner of Education of the United States was the chairman of Section IV, Education. This section was one of the largest of the congress. Section IV and the 10 subsections, with their respective committees, were as follows:

#### **SECTION IV—EDUCATION.**

*Chairman.*—**P. P. CLAXTON**, Commissioner of Education of the United States.

*Vice chairman.*—**S. P. CAPEN**, Specialist in Higher Education, Bureau of Education, Washington, D. C.

##### **SUBSECTION 1.—*Elementary Education.***

**JOHN H. FINLEY**, Commissioner of Education, State of New York, Albany, N. Y., chairman.

**PAUL MONROE**, Teachers' College, Columbia University, New York, N. Y.

**ERNEST CARROLL MOORE**, Department of Education, Harvard University, Cambridge, Mass.

**M. P. SHAWKEY**, State Superintendent of Schools, Charleston, W. Va.

##### **SUBSECTION 2.—*Secondary Education.***

**ELMER E. BROWN**, Chancellor New York University, New York, N. Y., chairman.

**JESSE BUTRICK DAVIS**, Principal Central High School, Grand Rapids, Mich.

**ALEXIS F. LANGE**, Head of the Department of Education, University of California, Berkeley, Cal.

**BRUCE R. PAYNE**, President George Peabody College for Teachers, Nashville, Tenn.

##### **SUBSECTION 3.—*University Education.***

**EDMUND JAMES JAMES**, President University of Illinois, Urbana, Ill., chairman.

**JOHN GRIER HIBBEN**, President Princeton University, Princeton, N. J.

**BENJAMIN IDE WHEELER**, President University of California, Berkeley, Cal.

**HARRY BURNS HUTCHINS**, President University of Michigan, Ann Arbor, Mich.

**WILLIAM OXLEY THOMPSON**, President Ohio State University, Columbus, Ohio.

**SUBSECTION 4.—*Education of Women.***

**SARAH LOUISE ARNOLD**, Dean Simmons College, Boston, Mass., chairman.  
**MARGARET SCHALLENGER**, Commissioner of Elementary Education, State Department of Education, Sacramento, Cal.  
**MARION TALBOT**, Dean of Women, University of Chicago, Chicago Ill.  
**MARY E. PARKER**, Western Reserve University, Cleveland, Ohio.  
**SUSAN M. KINGSBURY**, Bryn Mawr College, Bryn Mawr, Pa.

**SUBSECTION 5.—*Exchange of Professors and Students.***

**NICHOLAS MURRAY BUTLER**, President Columbia University, New York, N. Y., chairman.  
**EDWIN A. ALDERMAN**, President University of Virginia, Charlottesville, Va.  
**GEORGE E. VINCENT**, President University of Minnesota, Minneapolis, Minn.  
**HENRY SUZZALLO**, President University of Washington, Seattle, Wash.

**SUBSECTION 6.—*Engineering Education.***

**ARTHUR A. HAMMERSCHLAG**, Director Carnegie Institute of Technology, Pittsburgh, Pa., chairman.  
**FREDERICK A. GOETZE**, Dean School of Mines, Columbia University, New York.  
**G. C. ANTHONY**, Dean Engineering School, Tufts College, Mass.  
**R. M. HUGHES**, President Miami University, Oxford, Ohio.  
**HERMAN SCHNEIDER**, Dean College of Engineering, University of Cincinnati, Cincinnati, Ohio.  
**CARL L. MEES**, President Rose Polytechnic Institute, Terre Haute, Ind.  
**JOHN B. WHITEHEAD**, Johns Hopkins University, Baltimore, Md.

**SUBSECTION 7.—*Medical Education.***

**WILLIAM OLIVE BORDEN**, Dean Medical School, George Washington University, Washington, D. C., chairman.  
**C. E. MUNROE**, George Washington University, Washington D. C.  
**PAUL BAETSCH**, George Washington University, Washington, D. C.  
**B. M. RANDOLPH**, George Washington University, Washington, D. C.  
**F. A. HORNADAY**, George Washington University, Washington, D. C.

**SUBSECTION 8.—*Agricultural Education.***

**WINTHROP ELLSWORTH STONE**, President Purdue University, Lafayette, Ind., chairman.  
**ANDREW M. SOULE**, President Georgia Agricultural College, Athens, Ga.  
**ROBERT J. ALEY**, President University of Maine, Orono, Me.  
**RAYMOND A. PEARSON**, President Iowa State College of Agriculture, Ames, Iowa.

**SUBSECTION 9.—*Industrial Education.***

**WILLIAM T. BAWDEN**, Specialist in Industrial Education, Washington, D. C., chairman.  
**CHARLES A. BENNETT**, Bradley Polytechnic Institute, Peoria, Ill.  
**CHARLES A. PROSSER**, Director Dunwoody Industrial Institute, Minneapolis, Minn.  
**DAVID SNEDDEN**, former Commissioner Massachusetts Board of Education, Boston, Mass.

**SUBSECTION 10.—*Commercial Education.***

**GLEN LEVIN SWIGGETT**, Bureau of Education, Washington, D. C., chairman.  
**J. PAUL GOODE**, University of Chicago, Chicago, Ill.  
**FREDERICK G. HICKS**, Dean University of Cincinnati, Cincinnati, Ohio.

**JEREMIAH W. JENKS**, Director Division of Public Affairs, New York University, New York, N. Y.

**L. C. MARSHALL**, Dean College of Commerce and Administration, University of Chicago, Chicago, Ill.

#### DEVELOPMENT OF COMMERCIAL EDUCATION.

The subcommittee in charge of commercial education considered carefully the task of constructing a program and decided finally to invite the preparation of papers under topics that would give to these papers, when printed in the proceedings of the congress, the character of a dependable monograph on commercial education, a book for which there is great need, not only in the United States, but throughout Latin America as well. Commercial education has been the last of the so-called technical phases of education to receive attention and careful study on the part of educators. This is particularly true with reference to courses of study that prepare for foreign service, commercial and consular. The National Education Association has a department on business education and committees on vocational education and foreign relations, but the association has not given special attention to this phase of training. It has been left largely to extramural agencies, business and public activities, to awaken and stimulate the desire for the immediate introduction in schools and colleges of adequate preparatory courses of study on domestic and foreign trade. The National Foreign Trade Council has already prepared, through its committee on education, of which Mr. Wallace D. Simmons is chairman, a report based on a questionnaire submitted to the leading business men of the United States. Copies of this printed report may be obtained through the secretary, Mr. Robert Patchin, India House, Hanover Square, New York City. The Chamber of Commerce of the United States has appointed recently a committee of experts on vocational education, which is to include commercial education. The chairman of this committee is Mr. Frederick A. Geier, president of the Cincinnati Milling Machine Co. Information concerning the work of this committee may be obtained through Mr. Geier or through the secretary of the Chamber of Commerce of the United States, Mr. Elliot H. Goodwin, Riggs Building, Washington, D. C. The Commissioner of Education of the United States recently called a conference of representative educators, business men, and Government experts interested in the foreign aspect of business training. This conference was held Friday, December 31, 1915, during the sessions of the Second Pan American Scientific Congress. The president of the National Foreign Trade Council, Mr. James A. Farrell, presented on that occasion a notable address under the title "Preparation for Trade, Domestic and Foreign, from the Standpoint of the Business Man." A comple-

mentary paper, discussing the same question from the standpoint of the educator, was presented earlier in the same week by the dean of the graduate school of business administration of Harvard University. An abstract of Dean Gay's paper will be found in this bulletin, page 24. Pursuant to a resolution introduced at this conference, the Commissioner of Education has appointed a committee of 15 members to investigate the status of commercial education in the United States and other commercial nations, to recommend a course of study, and to suggest ways and means for its early establishment in educational institutions. Inquiries concerning the work of this committee should be addressed to the chairman, care of the Bureau of Education, Washington, D. C.

The following are members of this committee:

**H. D. Adams**, Professor of History, Leland Stanford University.

**Morton A. Aldrich**, Dean College of Commerce and Business Administration, Tulane University.

**John Clausen**, Manager Foreign Department, Crocker National Bank, San Francisco.

**James C. Egbert**, Director School of Business, Columbia University, New York City.

**William Fairley**, Principal Commercial High School, Brooklyn, N. Y.

**J. F. Fish**, President Northwestern Business College, Chicago, Ill.

**Frederick C. Hicks**, Dean College of Commerce, University of Cincinnati.

**Lincoln Hutchinson**, Professor of Commerce, University of California, and former American commercial attaché, Rio de Janeiro.

**Jeremiah W. Jenks**, Professor of Government, New York University.

**Samuel MacClintock**, Director La Salle Extension University, Chicago, Ill.

**Samuel B. McCormick**, Chancellor University of Pittsburgh.

**Leo S. Rowe**, Head Professor of Political Science, University of Pennsylvania.

**John E. Treleven**, Chairman School of Business Training, University of Texas.

**Charles H. Sherrill**, Counsellor at Law and Chairman Committee on Foreign Relations, United States Chamber of Commerce, New York City.

**Glen Levin Swiggett**, Bureau of Education, Chairman of the Committee.

The papers on commercial education of the Second Pan American Scientific Congress present a new body of material from which to proceed for further study and incorporation in the proceedings of subsequent congresses. In the earlier congresses the theme of commercial education was well-nigh negligible. The same remark holds true largely of vocational education in general, but applies in particular to commercial education. The program of the First Pan American Congress, at Santiago de Chile, contains titles of two papers on this subject by Prof. Francisco Araya Bennett, of Valparaiso, Chile. The titles of these papers are as follows:

1. "The desirability of introducing commercial education into the primary, secondary, and higher grades to meet the various requirements of business. The necessity also of maintaining supplementary courses for persons actually engaged in business."

2. "In what form should commercial instruction be carried on in professional schools for girls."



The earlier congresses seem to have omitted completely any consideration of this question. Deeming it, however, of paramount importance at this time, not only for economic reasons of higher efficiency in the organization of business and the marketing of products at home and abroad, but for less apparently selfish reasons of acquiring by study the international way of looking at things and of assisting in establishing international amity, the committee on commercial education, as mentioned above, constructed a program that would permit the definition of commercial education through a series of graded papers by persons expert in the particular phase of the subject which they were invited to discuss. Beginning with introductory papers presented by men prominent in business, education, and government, and proceeding through a symposium of brief talks which would show the intimate relations between the fields of education, business, and government in the establishment of commercial education, the program discussed carefully the general phases of this type of education in elementary, secondary, and higher schools, whether a part of, or separate from, the regular public-school system, and treated under separate headings each of the well-recognized subjects taught or to be taught in the curriculum of commercial education. Further, in view of the fact that certain private educational agencies, established solely for the purpose or as a part of a mercantile, manufacturing, or exporting system, have been prominent in the United States in offering specific or general courses of business, the committee included in its program papers from most of these agencies. The executive committee of organization of the Second Pan American Scientific Congress authorized the framing of certain topics, the discussion of which by a representative from each of the participating countries would create a series of Pan American conferences, with the idea that some joint action might be taken now or at some subsequent congress leading to mutual benefit in the carrying out of the resolutions consequent upon the discussion of the particular topics. The committee on commercial education submitted for discussion the following Pan American theme:

*How can a nation prepare in the most effective manner its young men for a business career that is to be pursued at home or in a foreign country?*

*(a) In schools that are a part of the public-school system.*

*(b) In schools of private endowment.*

*(c) In special business schools of private ownership.*

*Outline a course of study that will best prepare young men to engage in such a business career. Each suggested outline should consider not only the character of the educational system of the country for which the course of study is intended, but the desirability and practicability of a uniform course of business education for all Pan American countries.*

The program on commercial education, prepared by the committee in charge, follows.

**TUESDAY AFTERNOON, DECEMBER 28, 1915, 2.30 O'CLOCK.**

Pan American Union Building.

Chairman: PHILANDER P. CLAXTON.

Joint session of Sections IV and IX, with program furnished by subsections on commercial education and commerce.

INTRODUCTORY REMARKS.

WILLIAM C. REDFIELD, Secretary of Commerce, Washington, D. C.

ANDREW J. PETERS, Assistant Secretary of the Treasury, Washington, D. C.

JOHN H. FAHEY, President, United States Chamber of Commerce, Boston, Mass.

EDMUND J. JAMES, President University of Illinois, Urbana, Ill.

GENERAL TOPIC.

*Preparation for Trade, Domestic and Foreign.*

(a) *From the Standpoint of the Business Man.*<sup>1</sup>

J. A. FARRELL, President, National Foreign Trade Council, New York, N. Y.

(b) *From the Standpoint of the Educator.*

EDWIN F. GAY, Dean, Graduate School of Business Administration, Harvard University, Cambridge, Mass.

**WEDNESDAY MORNING, DECEMBER 29, 9.30 O'CLOCK.**

Pan American Union Building.

Acting Chairman: S. P. CAPEN.

*Is There a Profession of Business, and Can We Train for It?*

ELLIOT H. GOODWIN, Secretary, U. S. Chamber of Commerce, Washington, D. C.

*The Proper Use of Business Experts in Class Instruction on Domestic and Foreign Commerce. (Symposium—five-minute talks.)*

ROGER W. BABSON, President, Babson's Statistical Bureau, Wellesley Hills, Mass.

EDWARD N. HURLEY, Chairman, Federal Trade Commission, Washington, D. C.

WALLACE D. SIMMONS, Chairman, Committee on Education, National Foreign Trade Council, Philadelphia, Pa.

B. OLNEY HOUGH, Editor, "American Exporter," New York, N. Y.

WILBUR J. CARR, Director, Consular Service, Washington, D. C.<sup>1</sup>

HARRY ERWIN BARD, Secretary, Pan American Society for the United States, New York, N. Y.

J. F. CROWELL, Executive Officer, Chamber of Commerce of State of New York, New York, N. Y.

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<sup>1</sup> Presented before the Conference on Foreign Service Training, Friday, Dec. 31.

***The Proper Use of Business Reports, etc.—Continued.***

JOHN CLAUSEN, Manager, Foreign Department, Crocker National Bank,  
San Francisco.

E. T. GUNDLACH, Gundlach Advertising Co., Chicago, Ill.

**WEDNESDAY AFTERNOON, DECEMBER 29, 2.30 O'CLOCK.**

Pan American Union Building.

Acting Chairman: ROGER W. BABSON.

***Commercial Education.******In Latin America—***

EDGAR E. BRANDON, Dean, Miami University, Oxford, Ohio.

***In England—***

I. L. KANDEL, Carnegie Foundation for the Advancement of Teaching,  
New York, N. Y.

***In Germany—***

FREDERICK ERNEST FARRINGTON, Special Collaborator, Bureau of Edu-  
cation, Washington, D. C.

**THURSDAY MORNING, DECEMBER 30, 9.30 O'CLOCK.**

Pan American Union Building.

Acting Chairman: ROGER W. BABSON.

***Modern Business and the New Orientation of Commercial Education.***

ISAAC GRINFELD, Director, International Correspondence Schools, Buenos  
Aires, Argentine Republic.

(a) *Preparation for a Business Career in Chile.*

(b) *Latin-American Standpoint on Business Education.*

FRANCISCO ARAYA BENNETT, Attorney at Law, University Professor of  
Political Economy and Principal Commercial Institute, Valparaiso, Chile.

***The Arguments for a Separate or Combined Course of Commercial Study.***

ROSWELL C. MCCREA, Dean, The Wharton School, University of Pennsyl-  
vania, Philadelphia, Pa.

***What Can the Small College Do in Training for Business?***

GEORGE W. HOKE, Miami University, Oxford, Ohio.

***How to Procure Adequately Prepared Instructors for Colleges and Universities.***

JAMES C. EGBERT, Director School of Business, Columbia University, New  
York, N. Y.

**THURSDAY AFTERNOON, DECEMBER 30, 2.30 O'CLOCK.**

Pan American Union Building.

Acting chairman: ROGER W. BABSON.

***The Problem of Commercial Education in (a) Elementary Schools. (b) Second-  
ary Schools. (c) Colleges.***

(a and b) *Elementary and Secondary Schools—Foundation; Subjects: Articulation, Correlation, and Methods.*

(a) F. G. NICHOLS, Director Business Education, Department of Public  
Instruction, Rochester, N. Y.

(b) PAUL MONBOE, Teachers College, Columbia University, New York, N. Y.  
DAVID SNEDDEN, former Commissioner of Education of Massachusetts,  
Boston, Mass.

**(c) Colleges—Entrance Requirements.**

DAVID KINLEY, Dean Graduate School, University of Illinois, Urbana, Ill.

W. F. GEPHART, Professor of Economics, Washington University, St. Louis, Mo.

**MONDAY MORNING, JANUARY 3, 9.30 O'CLOCK.**

Pan American Union Building.

Acting chairman: ALBERT A. SNOWDEN.

***The Teaching of Special Subjects in the Collegiate Course of Study for Business, Domestic and Foreign.***

***Languages—***

GLEN LEVIN SWIGGETT, Bureau of Education, Washington, D. C.

***Geography—***

J. PAUL GOODE, University of Chicago, Chicago, Ill.

***History—***

WM. R. SHEPHERD, Columbia University, New York, N. Y.

***Government—***

JESSE S. REEVES, University of Michigan, Ann Arbor, Mich.

***Mathematics—***

EVERETT W. LORD, Boston University, Boston, Mass.

***Banking and Finance—***

CHARLES LEE RAPER, University of North Carolina, Chapel Hill, N. C.

***Business Law—***

WARD W. PIERSON, the Wharton School, University of Pennsylvania, Philadelphia, Pa.

***Business Ethics and Psychology—***

JAMES E. LOUGH, New York University, New York, N. Y.

***Organization and Administration—***

ARTHUR E. SWANSON, Northwestern University, Evanston, Ill.

***Statistics—***

E. DANA DURAND, University of Minnesota, Minneapolis, Minn.

***Accounting—***

JOHN B. GEIJSBEEK, Foster Building, Denver, Colo.

DONALD F. GRASS, Leland Stanford Junior University, California.

**MONDAY AFTERNOON, JANUARY 3, 2.30 O'CLOCK.**

Pan American Union Building.

Acting chairman: ALBERT A. SNOWDEN.

***Special Schools of Secondary Grade: Raison d'être; character and method of instruction.***

***Commercial High School—***

WILLIAM FAIRLEY, Principal, Commercial High School, Brooklyn, N. Y.

***Young Men's Christian Association—***

EDWARD L. WERTHEIM, Director, West Side Y. M. C. A., New York City.

***Business Colleges—***

O. C. GAINES, President, Eastman Business College, Poughkeepsie, N. Y.

***Value of Commercial Education—***

WILLIAM JENNINGS BRYAN.

**TUESDAY MORNING, JANUARY 4, 9.30 O'CLOCK.**

**Pan American Union Building.**

**Acting Chairman: FREDERICK C. HICKS.**

***Special Schools of Commercial Education of College and University Grade.  
Tulane University.***

**DEAN MORTON A. ALDRICH, College of Commerce and Business Administration, New Orleans, La.**

***University of Cincinnati: Continuation and Evening Courses.***

**DEAN FREDERICK C. HICKS, College of Commerce, Cincinnati, Ohio.**

***University of Oregon: Problems of the Detached School.***

**HARRY B. MILLER, Director, School of Commerce, Eugene, Oreg.**

***New York University: Two-Year Course and Individualization of Training for Business.***

**JEREMIAH W. JENKS, Director, Division of Public Affairs, New York University, New York, N. Y.**

***The Graduate School of Business:***

***Amos Tuck School of Administration and Finance, Dartmouth College.***

**DEAN H. S. PERSON, Hanover, N. H.**

***Harvard Graduate School of Business Administration.***

**DEAN EDWIN F. GAY, Cambridge, Mass.**

**TUESDAY AFTERNOON, JANUARY 4, 2.30 O'CLOCK.**

**Pan American Union Building.**

**Acting Chairman: ROGER W. BABSON.**

***Special Courses for Commercial Study. Statement as to Aims and Achievements since Establishment.***

***Correspondence Schools.***

**T. J. FOSTER, President, International Correspondence Schools, Scranton, Pa.**

**SHERWIN CODY, Director, National Associated Schools of Scientific Business, Chicago, Ill.**

***University Extension Work for Men in Business.***

**SAMUEL MACCLINTOCK, Director, La Salle Extension University, Chicago, Ill.**

***Alexander Hamilton Institute.***

**JOSEPH FRENCH JOHNSON, Dean School of Commerce, Accounts, and Finance, New York University, New York, N. Y.**

***National Association of Corporation Schools.***

**LEE GALLOWAY, Secretary, Alexander Hamilton Institute, New York, N. Y.**

***Commercial Museum.***

**W. P. WILSON, Director, Commercial Museum, Philadelphia, Pa.**

***The National City Bank.***

**F. C. SCHWEDTMAN, Educational Director, the National City Bank, New York, N. Y.**

***Bureau of Commercial Economics.***

**FRANCIS HOLLEY, Director, Bureau of Commercial Economics, Washington, D. C.**

**FRIDAY AFTERNOON, JANUARY 7, 2.30 O'CLOCK.**

New Willard Hotel.

Chairman: JOSÉ MARIA GÁLVEZ.

Discussion of the Pan American Topic:

*How can a nation prepare in the most effective manner its young men for a business career that is to be pursued at home or in a foreign country?*

(a) *In schools that are a part of the public-school system.*

(b) *In schools of private endowment.*

(c) *In special business schools of private ownership.*

*Outline a course of study that will best prepare young men to engage in such a business career. Each suggested outline should consider not only the character of the educational system of the country, for which the course of study is intended, but the desirability and practicability of a uniform course of business education for all Pan American countries.*

Papers presented by—

SANTIAGO H. FITZSIMON, Professor International Correspondence Schools,  
Buenos Aires, Argentina.

AGUSTIN T. WHILAR, Lima, Peru.

ANTONIO L. VALVERDE, Professor, School of Commerce, Habana, Cuba.

A. AUBERT, Managua, Nicaragua.

M. DELLEY, Caracas, Venezuela.

FRANCISCO ARAYA BENNETT, Valparaiso, Chile.

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In the belief that the main facts of the papers presented before the subsection on commercial education should be made known as early as possible, the Commissioner of Education of the United States requested the publication of the abstracts of these papers in advance of the publication of the latter in the proceedings of the Second Pan American Scientific Congress. These abstracts have been made by the writers of the papers or by the compiler of this bulletin. In a few cases the statement is taken from the official stenographic report.

### *FIRST SESSION.*

The Secretary of Commerce of the United States, under whose direction the Department of Commerce has shown a keen interest in the early establishment of commercial education in schools and colleges, was the first speaker at the opening session of this subsection. Mr. Redfield spoke, in part, as follows:

It is a sad fact that in business of all lands science and commerce have been greatly divorced. They have looked at each other askance, and not in this country alone, for there have been in America, and there still are, men who speak of the "practical" things as distinguished from the scientific thing; who argue that the scientific mind is the most modest of all minds if it be truly scientific, because it is that mind which seeks ever for the new truth. And

this antagonism between the so-called practical and the scientific method has been deeply hurtful to American commerce; has resulted too much in the reign, now largely passing, of what we may call the "rule of thumb." I find in a newspaper published this week what will strike you, I am sure, strangely as the title of the article. It reads, "Adapting Science to Commerce." As if science, after all, was to come to be a servant and handmaiden of this thing we call commerce! I hope there yet may be a larger development of this thought, and that we shall come to recognize our own beginnings, at least, of a science of commerce, that we shall consider commerce itself as a matter requiring in very truth a scientific training.

And now, how do we make the science with which we have to deal the servant of commerce? I purpose to touch only very briefly on a little of what the scientific work of the Government does, so far as we have to do with it. First, as to how it affects the commerce of the country; for, to my thinking, we shall never reach what the commerce of America ought to be; it will never be the friend of our country and the other countries that it is possible it may be; it will never spread its influence abroad as it ought to do until we picture the United States aiding her commerce with the light that science can shed upon it. We need our industries; we greatly need the aid and constant thought of scientific men. We are as yet bunglers in much of our commercial work. We are attempting to do a great deal of commercial work all over the land with untrained and untaught instruments. We have not yet developed a class of trained commercial men. If you knew the difficulty we have to get men fit to go into the lands at the south, fit to be seen in the presence, as the equals in mind and training, of the great merchants and bankers and business men of the great South and Central Americas, you would realize this more fully. The simple question: What modern languages does this gentleman speak? mows down like a scythe the great mass of applicants for commercial work. In what particular branch of commerce is the gentleman trained? acts like a sickle. The few we are able to get are pitifully few as compared with the needs that exist for trained men, speaking the languages of the living world, and not the dead languages, and knowing something at least of what commerce means in all its broad significance. For the modern conquistador of commerce leaves no ruins in his path. He is a builder up of things. He is not the man who tramples with the iron heel of war, but he is a true constructor. He draws nations together; and just as the conquistador of old had to be trained for his fierce and cruel war, so the conquistador of to-day needs to be trained for his work of useful living, of helpful service. And we know perfectly well that to send men out into the great commercial arenas of this world untaught, untrained, with what we are pleased sometimes to call a general education, is to send him to defeat, and to submit the nation to harm because the man is not equipped for the task. That is a branch of commercial education which has its manifold phases. I could not as much as touch upon them all here to-day, but I may lift a corner of the veil which shows how true it is that the scientific man of this hour is the servant and supporter of commerce, and how upon his work commerce is building. If it were not for applied biology, there would be no pearl-button industry in America. I presume there are a great many pearl buttons in this audience. You take them and use them, pay a few cents for them without one thought that it requires constant active work of biological scientists to provide so simple a matter as a pearl button. And yet if we did not have applied biology your pearl buttons would be very high-priced, because the supply of them now comes from the rivers of the Mississippi Valley and the supply was long ago threatened to be exhausted. How was the supply



replenished? That meant that some one, somewhere, must find where the freshwater clam came from, for it is his shell that provides the raw material from which the pearl button is obtained.

I should like to talk to you about the researches in the Bureau of Standards; to go into the great facts, the great truths which underlie our industries. There we keep something like 400 young scientific men working all the time. Did it ever strike you that there is no such thing as a standard of color? That your views and your fellowman's views as to what was red, yellow, or green may be different? There is no such thing as a standard red. Did you ever realize that there are great industries depending upon accurate colors? And there is no standard by which these things can be positively determined; so that I doubt if there is anyone in this room who could say with accuracy as to red, green, blue, or yellow. If I asked you to bring me red, I am sure 20 different shades, if not 200, would be brought. These things have to be known. There are industries depending upon a definite known standard of color, such as oleomargarine, butter, cottonseed oil. We are working at the department on what standards of color are. It is our duty to go into many facts which are a little beyond the ordinary things of living and bring them out and see if we can determine the lines by which nature operates and make them useful to mankind.

In all this we are simply the servants of commerce, and it rejoices us day by day and more and more to see the recognition of this service coming from the men who are the great producers of the commercial world, until we have come to believe that the veil is lifting and the scientific man is finding his place, and that we shall add to the science of commerce as it should be done by trained men in science, in all its bearings, backing up commerce by scientific truth and supporting commerce in its final phases.

The Assistant Secretary of the Treasury, Hon. Andrew J. Peters, followed the Secretary of Commerce, and in his remarks, particularly timely because of his intimate knowledge of the very successful achievements of the recent Pan American financial conference, convoked in the city of Washington by the Secretary of the Treasury, addressed himself, among other things, to the question of training for foreign trade. Mr. Peters said:

Since the outbreak of the European war interest in foreign trade in the United States has been something entirely unparalleled in our previous experience. During the last half century, when our foreign trade has been growing steadily from year to year, we have not had the same attitude toward foreign trade which the people in the principal nations of Europe have had. In the first place, we have not possessed a merchant marine. Thus our foreign trade has been physically in the hands of the people of other commercial nations. We have exported chiefly raw materials and agricultural products which practically sold themselves, and consequently did not have to go out and study foreign markets and possible foreign outlets for our principal export products. Instead, the representatives of foreign merchandising concerns and the foreign merchants came to us and took off our hands what we had to supply, and there was the end of the transaction. All the merchandising problems, with a few notable exceptions, were solved for us by the mere force of economic conditions. We were anxious to sell only to the same extent that foreign buyers were anxious to buy.

The result of it all has been that foreign trade has not offered a career to a large number of Americans in the same way that foreign trade has offered a



career to a large number of Englishmen, a large number of Dutchmen, Germans, and Frenchmen. The peoples of those nationalities have for years been marketing manufactured products, and manufactured products which required the cultivation of sales ability and vigorous penetration into foreign markets. Those countries have been developing their merchant marines and have been actually handling their own export commodities up to the time when they reached the consumers in foreign lands. Foreign commerce in those countries has consequently for years offered a career. In England young men starting in business have been confronted with specific opportunities to go to the colonies and to go to foreign countries representing English industrial concerns. In France the development has been along the same lines, though on a smaller scale. In our country we have thought of "the learned professions," the Army and Navy, and possibly some other branches of Government service under the conception of a career. Certainly the ordinary employee beginning with a commercial concern has had no such lofty idea as that of a career ahead of him. He has had a job, no very definite aims or ambitions; if another line of employment offered a better job he would take it no matter how far removed it might be from the line he was in before, if he thought he could hold down the new job, liked the firm, etc.

We must acknowledge that Germany is indisputably ahead of us in the whole matter of vocational training, and though the development of the fine network of schools of commerce in that country is recent, the system has brought and is bringing such good results that the appropriations for the extension of this kind of instruction have not been begrudged. It is in these schools that the Germans get the training which fits them for commerce as a career; those who select foreign commerce, world commerce, receive the proper training for their chosen work. Before 1880 the commercial schools (*Handelsschulen*) were almost unknown even in their elementary forms, and it is only since 1890 that their development has been really notable. The commercial schools were at first looked upon as superfluous or as specializing too early or too highly. Gradually, however, the various governments, the trade organizations, the chambers of commerce, came to realize the importance of this class of instruction, and to-day in Germany the higher institutions of learning devoting special attention to the training of men to meet the vast problems of world trade are better established and better equipped than those of any other country. The trade schools teach the artisan how to apply science and skill in the handicraft employments, and the commercial schools educate the merchant, the wholesaler, the world dealer, the great banker, the consular officer—in short, the men who stand at the head of the commerce of the Empire. It is felt that both systems of education are necessary for the successful development of the manufacturing industry and the marketing of commodities, upon which, in truth, the success of the manufacturing industry so largely depends. A few years ago United States Deputy Consul Meyer made an interesting report on the development of these schools and on the attitude toward them in Germany. This report was published by the Department of Commerce as *Special Consular Reports*, volume 38. Mr. Meyer has pointed out that in Germany education invests a man with a peculiar social prestige, irrespective of his personality. The social standing of the mercantile classes has been elevated by a higher education in the schools of the type of the commercial high schools. Instruction in these schools is given not only by the regular professors, but is in a very large measure given by practical men of affairs. The effort has constantly been made to safeguard the instruction from becoming too academic and including too practical aspects; that is, to keep the instruction from becoming of a typical professorial sort. In one

or another of the schools practically all the languages of the civilized world are taught, not only the ordinary commercial languages which are a subject of instruction in our universities, but even the most outlandish tongues, such as the bantu and other negro dialects which prevail in some sections of Africa where the Germans have been seeking foreign trade.

In our Government service we have recently expanded our foreign trade work in consequence of the ever-increasing demand for such work on the part of American manufacturers. I have been informed that the Department of Commerce and the Department of State have experienced difficulty particularly in getting men with the proper education and training to do this class of work. In language training most candidates have been decidedly deficient. The Bureau of Foreign and Domestic Commerce of the Department of Commerce has been conducting examinations practically every month during the year 1915. Candidates have reported that they have studied French, German, or Spanish for so-and-so many years in our universities, and when the tests have come it has been shown that they are woefully deficient in practical knowledge of the languages. Their training in commercial geography and in matters relating to the technique of the export trade has been equally deficient. Perhaps the most discouraging feature in this problem is that the leaders in our schools and colleges seem unable or unwilling to see the need, or, having seen it, are unable or unwilling to give the thorough instruction necessary. If ever the educator had a definite, concrete problem to solve, it is this. Up to the present time there are no appreciable results. Several of the commercial schools and colleges are giving excellent instruction to young men intending to engage in business in this country, and some are offering good courses in foreign trade. But these courses have not been grouped so as to give the all-around training necessary for success in export trade; the language work is inadequate, and no opportunity is provided to acquire the requisite practical experience.

Mr. Fahey, president of the Chamber of Commerce of the United States, called attention in his paper to the increasing interest on the part of the business men in the United States in the schools of the country, and to the fact that emphasis is being laid upon education for business and commerce as never before. Referring to the successful High School of Commerce in Boston, he said:

This school has been established something like nine years now, and at present is educating a little less than 1,600 pupils. The course is a four-year course. The average number of graduates is in the neighborhood of 200; and as an evidence of the value of this type of education, the fact that there is a demand for it, you will be interested to know that fully 70 per cent of the graduates have positions waiting for them two and three months before completing their education, and most of the others are quickly snapped up by the business houses of Boston and Massachusetts. The system has been developed to a point where, in the view of our local business men, it is meeting their needs in a most satisfactory way. The school has an advisory committee composed of business men among the business men of our community who give their time willingly in superintending the courses of study and the detail work. Moreover, they are devoting their time to series of lectures on the part of the business men to the pupils of the school. The young men in the school do a certain amount of continuation work in that a large proportion of them secure positions during the holiday season and during the summer vacations in business houses in and about Boston. The records they have made there have been

most satisfactory. There is being developed in connection with the school a rather promising commercial museum. We are likewise raising the funds for scholarships to send young men abroad to take up special courses of study, fitting them for their life work. As evidence of very practical work, there is maintained now within the school a savings bank, as a branch of a local bank, all the detail work being done by the pupils of the school, and only the results when accumulated turned over to the banking institution. That has given not only a mental training, but a physical training is not overlooked. It has been realized by our men that these youngsters who are trained at our schools serve their purposes in life most when they are personally strong as well as mentally fit. An elaborate system of gymnastics, therefore, is encouraged, with satisfactory results.

Work along these lines is also being done with most satisfactory results in the New York High School of Commerce; also at Detroit, Springfield, and Providence, and a number of other cities. It is being taken up rapidly by one town after another. As a result more business men, chambers of commerce, and boards of trade have cooperated with educational systems.

For one, I believe that the cooperation which has already gone on can go still further; first of all, so far as business organizations are concerned, I think that every city of any size in this country ought to have an intelligent, efficient organization as a part of the system, a business organization. Moreover, some scheme might be developed that would lead to a great international cooperation between schools and between the business men themselves. There is an appreciation of that need, not only on the part of legal business organizations, but on the part of the national federation which is represented by the chamber of commerce, in that we have a committee on education, and that, aside from that, we are just completing a special committee to undertake to go into university needs and to devise better means for the promotion of cooperation between them than have existed so far. Organized methods should be devised for the interchange of students between the countries of North and South America, and better organized methods should likewise be worked out for a closer cooperation between the business men of the countries. So far as the students are concerned, I know some demands have already been made on the part of the South American countries to place young men in the business houses and manufacturing establishments in this country, and because it has been more or less haphazard it has not been as successful as it should be. Much better results will be secured if they undertake to organize. I know the Chamber of Commerce of the United States will be glad to cooperate with the chambers of commerce and other business bodies of South America to help in this direction.

President Edmund J. James, of the University of Illinois, and Dean Edwin F. Gay, of the Harvard Graduate School of Business Administration, who rank easily among the best-informed educators in the United States on the subject of business training, presented papers at this session, speaking largely from the standpoint of the educator.

President James said in part:

Thirty-two years ago this autumn I joined the faculty of the Wharton School of Finance and Economy of the University of Pennsylvania. This school was an integral part of the college department of the University of Pennsylvania. So far as I know, it represented in its origin and development the first real attempt either in Europe or America to develop a center of higher

learning in intimate connection with the other important faculties of our historic universities, to provide a curriculum of university grade and university character which it would be worth the while of the future business man to complete before beginning the practical work of his career.

Many of the subjects which entered into the curriculum of this school had, of course, been for a long time objects of cultivation in university centers, both in Europe and America. Economics in the widest sense of the term, politics, history, had been, of course, important subjects of study in university centers since their establishment. More practical subjects, like bookkeeping and accounting, commercial geography, and similar subjects, had been utilized in the secondary schools and in special technical preparatory schools in all countries. A course in commercial education had been organized and conducted for a brief period in the University of Illinois in the latter part of the seventies, but it did not succeed, according to the ideas of the men responsible for the conduct of the institution, and was soon dropped.

The great commercial schools in Europe, such as those at Antwerp, Leipzig, Vienna, and Paris, had no intimate connection, and, generally speaking, no connection at all, with the universities or university life of their respective countries. In fact, it was felt that there was nothing in the business career, nothing in the subjects with which a business man busied himself, which offered any good ground for including them within the university curriculum or locating their cultivation at the university centers.

In this sense, therefore, the Wharton School of Finance and Economy represented a real departure. Its organization, development, and great success marked an epoch in the development of this important side of higher learning. The Wharton School of Finance and Economy has been a pioneer and has influenced the policy, not merely of this country, but of foreign countries as well. I think it is not too much to say that the establishment of the commercial courses at Manchester and the other provincial English universities, the affiliation of the great schools of commerce in Berlin, Leipzig, and Munich with the universities can be traced pretty directly toward the movement inaugurated and ever pressed by this original university school of business.

If the university, therefore, is to become a center of training for the future business man, it must have a set of sciences by the acquisition of which it can give this fundamental training which shall prepare a man for the largest success in a business way.

This was to a considerable extent the greatest obstacle which we had to overcome in initiating the work of the Wharton School of Finance and Economy. There was little or no valuable literature accessible to the student bearing on the subjects which he might wish to pursue as a part of his training for business. One reason why the movement has received such a great impetus in the second 15 years as compared with what was possible in the first 15 years of this development is to be found in the fact that we are finally developing a literature worth studying, worth reading in the English university sense of the term "reading."

I expect to see the university in the United States of America a center for the scientific study of business and for valuable scientific contributions to our knowledge of business. I expect to see our practical people turning more and more toward the university as the place from which thoughtful logical analysis and criticism of business methods and business practices shall proceed. I expect to see further the business world coming to an ever greater realization of the fact that they can find in the young men who have had this business training of the university most valuable assistants, men who can do in 5

years or 10 years what untrained men can not do in a generation, and many times can not do at all. If this comes about, the young man who is looking forward to a business career, who is expecting to become a banker or a railroad officer, or an insurance officer, or the head of a merchandising firm, will think as little of going into any one of these businesses without a preparatory university training as the youngster thinks to-day of following a medical career without going to a medical school, or a legal career without attending a law school, or an engineering career without completing the course of an engineering school.

The following is an abstract of Dean Edwin F. Gay's paper:

The educational organization has not kept pace with the industrial organization since the great changes wrought by the industrial revolution. In the earlier period the educational system, including apprenticeship as well as formal schooling, was adapted vocationally to the social needs. The factory system undermined apprenticeship, the type of education evolved under the handicraft system, and has put nothing in its place. The readjustment of the educational organization has been retarded in taking over this work not only by its traditional conservatism, but by the pressure, imposed by political democracy, of extending elementary education to include all classes. This great task having been successfully undertaken, attention has been turned in recent decades to the problem of vocational training. In this direction industrial education has earlier worked out a clearer program for future progress than commercial education. Training within the business, such as that provided by the older apprenticeship system and more recently by the corporation school, is inadequate for present conditions. The older established commercial courses in the high school have been limited to clerical education. The secondary schools and colleges are now called upon to develop their commercial training, and they have made a promising commencement in this work. In relation to the whole field, the schools of business administration have the especial function of leadership in research. A fuller content and a more advanced theoretical basis must be given to the courses of study leading to a business career, and it is for this reason that emphasis should be laid for the present upon the opportunity and responsibility of the schools of college grade. The growing international competition is likely to compel a more serious attention to educational problems, especially in their vocational aspects.

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## SECOND SESSION.

The second session of this subsection was held Wednesday morning, December 29, in the building of the Pan American Union. This session was carried on as a symposium in which several experts took part, speaking to the topic, "*The proper use of business experts from the business world in class instruction on domestic and foreign commerce.*" Introducing this symposium, the secretary of the Chamber of Commerce of the United States, Mr. Elliot H. Goodwin, presented a paper on "*Is there a profession of business and can we really train for it?*" In Mr. Goodwin's opinion the feasibility of training for business must be decided by the business men themselves; for the



result which advocates of commercial training seek is an increased demand by business heads for trained subordinates, a demand that will be based upon an increasing success of school-trained over office-trained men and must lead to an increased number of students. Enlightened business opinion, he said, has been the incentive and moving force which has created the growth and support of commercial education in this country and has led to the installation of courses of business administration.

Mr. Goodwin said in part:

Whatever skepticism on the part of business men may have existed in the past in regard to the practicability of commercial training certainly has been greatly lessened in the face of the crisis through which we are now passing. The lessons of the war in regard to business come home particularly to those engaged in intercourse between North and South America. What more than any other one thing stands in the path of complete development of commercial relations between the nations of the south, cut off from their usual sources of financial aid and industrial supplies, and that rich nation of the northern continent, seeking new markets for its oversupply above domestic consumption? In the face of the emergency and the opportunity bitterly must we, north and south, in Pan America regret that lack of real commercial education which goes beyond languages, commercial usages, international banking, credits, and foreign trade—needs which we are endeavoring to supply by emergency schools and classes—to those fundamentals of successful commercial intercourse, knowledge of geography, racial conditions, history, customs, and social life. The cataclysm of the European war caught the Americas, North and South, commercially unprepared, and that unpreparedness lies mainly in the lack of commercial education.

Competition in business is becoming keener, success is requiring a greater degree of knowledge, breadth, and ability. The development of foreign trade has brought the American merchant in touch with foreign competitors, and the lessons thus learned as to new methods of doing business have been reflected at home. It is one thing to compete with your fellow countryman in the home market behind the protection of a tariff wall, and a totally different thing to break into the foreign market where a foreign competitor has already intrenched himself and compete with him with no protection of any kind. The lessons thus learned have their application to domestic competition. The field for business education is there. How it shall be taught and how far it can practically be carried, are the main questions. Clearly the school of practical experience produces but a small proportion of men with large business capacity. As a method of training it is wasteful. It is equally clear that the college or university commercial training can not be expected to graduate only those of marked business ability any more than law schools produce great lawyers or medical schools produce great surgeons. Much remains with the man himself, his inborn capacity and power to expand. Yet professional training for lawyers and doctors is now universally accepted. What is there about business capacity or executive ability that would place them beyond the pale of those things for which a special education is valuable? Is it the power to handle men? Then, the training of the army officer or the professor should be equally futile. Is it the imagination, the power to grasp and arrange in an ordinary manner and execute? If these can not be trained or trained in part, what practical purpose does education serve? To what end the study of history and biography, if it does not

and it is the duty of the Government and the industry of others to our own prob-  
lem. It is the duty of the Government of men in all walks of life who have started at  
the bottom and have reached the top. There is nothing so sad in business  
and industry as the loss of the spirit of those who are com-  
petent to do the job. The loss of the spirit of the education or the almost super-  
natural will of the few who will permit them to rise above a  
certain level. In commercial education lies the hope for the future of  
America.

Mr. Goulden's paper was discussed at length by Mr. Albert A. Sullivan, of the National Association of Manufacturers, and Mr. J. F. Cronin, of the Chamber of Commerce of the State of New York, in connection with the tariff.

Mr. Sewell said in part:

The National Association of Manufacturers is composed of about 4,000 concerns engaged in business. All of these member concerns have something like 6,000,000 employees. The extent of the organization is shown by the fact that our members produce more goods than any other industry in the country. We are interested in industrial education rather than in commercial. Perhaps there are hundreds of thousands of students getting instruction in industries and in industrial and commercial education in various forms of schools—State, municipal, private, and other forms. The students in our institutions are receiving education in a peculiar way. They are our employees, and while they are earning money they are receiving instruction in a practical way. I feel as though we ought to have a complete and thorough organization for finding out what has been done in similar organizations in other countries of the world. We have a very large audience through our publications in connection with these industrial matters. A perusal of these publications will show you that this body is greatly interested in commercial and industrial training.

There is a wonderful lack of space in this congress devoted to manufactured goods. It is in education along this line that we are interested. In the promotion of foreign trade it is absolutely essential that the trader may have knowledge of the manufactured goods in detail and the conditions of sale of such goods, etc. From our point of view, at least, it is considered quite practical that these courses, especially studies which are supplementary to the regular courses usually given in schools, include continuous instruction in matters connected with exports, the banking business, etc. There ought to be some classification of manufactured articles—from experiments myself I know there are somewhere between 35 and 40—and a part of the program should be given over to the treatment of manufactured goods.

**Mr. J. F. Crowell remarked:**

I wish to say a few words on the general question of whether business is a profession. It seems to me, from the experience I have had in the field, that it is not yet what it may aspire to, because the business man, taken as a class, has not developed any such privileged position as the lawyer, the physician, or the engineer. Again, the field of commercial knowledge is in no sense organized, as it is in medicine or in law or in engineering or in theology. In the third place, the sense of economic responsibility by which all business conduct can be referred to a common standard, is not so highly developed in the business man of to-day as is the ethical which we find in the ministry or in the law or other professions. Fourthly, a professional career is not primarily a career whose end is economic profit. The business man's aim and end is primarily profit. The

professional man works to attain and maintain a privileged position and a high standing in his community. Any profit connected with that work is, in a measure, incidental. The standing he attains in his community is a part of his reward. Furthermore, he works for progress in his profession—medicine, theology, or whatever it may be. The business man devotes himself to his business for gain, for profit, primarily; while the professional man follows his pursuit for the attainment of a privileged position. These distinctions seem to me to be conclusive as against the claim that you can train business men up to the high plane occupied by the professional man. Certainly business has not yet attained to anything like a professional status. I believe, however, that with the development of education there will be a marked rise in the standards of business men in business pursuits.

#### PROPER USE OF BUSINESS EXPERTS IN CLASS INSTRUCTION ON DOMESTIC AND FOREIGN COMMERCE (SYMPOSIUM).

The following are the authors' abstracts of papers presented at this symposium:

Mr. ROGER W. BABSON, president of Babson's Statistical Bureau, Wellesley Hills, Mass.—The president of one of our country's great industrial organizations asked me concerning the best college to which to send his son, whom he desired to fit to become vice president of the great corporation and eventually to have entire charge of its investments, property, and employees. I suggested a general four-year course at some university and two additional years at the Massachusetts Institute of Technology, or four years at the institute and then two years at the Harvard School of Business Administration. He agreed that either of these would be an ideal combination, but he believed six years was, in this instance, too long. This incident well illustrates the position which many men take relative to higher education for administrative positions, and I hope to see some institution soon make definite provision for meeting this well-justified demand. The first year of such a course might be identical with the courses at any college, while in the second year the student might take up, with the general work common to the engineering courses, the study of bookkeeping and business mathematics and begin the study of applied economics. The third year he might specialize along the lines of options and begin the practical engineering work most applicable to the special option chosen. If the student decided to enter manufacturing, he should then take up some fairly advanced studies in mechanical engineering. If he decided to enter the transportation business, he should take strong courses in railroad engineering and electrical engineering. If he intended to go into banking or general business, he should study the financial side of railroad and industrial enterprises, as well as the more advanced features connected with general banking.

The main reason why I am anxious to have schools establish such courses of commercial training is because at the present time there are no such combined courses provided. The establishment of such courses in any school would greatly help the institution on the public and financial side by causing the leaders of industry to interest themselves more directly in its work and by attracting young men of wealth seeking to prepare themselves for administrative positions. There is, however, a far greater reason why all of us should aid in establishing a course in commercial training. I refer to our Nation's need for men trained along these lines. Every feature of mechanical, electrical, and chemical engineering has been taught in its minutest details; but to the great fundamental factors of trade, upon which the ultimate progress of all



our industrial, electrical, and transportation enterprises rests, we have given only the briefest consideration. For this reason, probably more than any other, we so long had to endure one of the poorest monetary and credit systems on the face of the globe. Young men are graduated from our universities utterly unable to discuss intelligently the fundamental principles of credit, trade, and conservation. Our people are wasting their resources, misdirecting their efforts, and playing at politics because the graduates of our colleges are not thoroughly grounded in applied economics.

MR. EDWARD N. HURLEY, chairman of the Federal Trade Commission of the United States.—Professional and business activities were once limited by national boundaries, but to-day the pursuit of any profession or occupation is likely to lead into the foreign field. Only political boundaries now remain; economic and industrial frontiers have been swept away. The business man, more frequently than any other now, becomes a citizen of the world. As foreign trade increases, the question of industrial efficiency and of the fitness of the business man of to-day becomes more important. This touches particularly the college student, to whom the business man of the present, versed in the requirements of the domestic market, must eventually pass over the reins. A manufactured article never sells itself abroad as does a bushel of wheat. It must either fill a new demand or displace a like product from another country. And the early detection of the new demand requires as much, if not more, skill and organization than does the attainment of superiority in quality over the rival British or German article.

While the boys of the United States have been educated to the responsibilities of domestic trade, a large percentage of the youth of Europe has been specially trained for foreign commerce. In languages, in world-business practice, in banking, and in shipping law they have been painstakingly instructed, and thus each of our great competitors has a huge army of capable young foreign traders familiar with the rules and phraseology of world trade, subjects of which all but a comparatively few Americans are ignorant.

Nothing would enable the college student to grasp the significance of foreign trade so quickly as a contact in the classroom with men prominent in the foreign business of the United States. Men who are directly in touch with foreign competition can furnish detailed and practical information obtainable nowhere else, and in addition they will inspire the student with the enthusiasm which comes only from personal touch with big affairs. My intention is not to undervalue the systematic teaching of foreign languages, banking and shipping laws, commercial geography, and the intelligent use of statistics, cost accounting and bookkeeping, and, in fact, a general systematic course in foreign trade. These are, of course, essential. I think, however, that such a course should be supplemented from time to time by lectures of experts from the business world. These men will make the student realize the vital relation between his studies and the conquest of foreign markets and give him enthusiasm for achievement over our foreign competitors.

MR. E. T. GUNDLACH, of the Gundlach Advertising Co., Chicago, Ill.—Recent college experiments in the use of business men as class lecturers prove, in spite of many failures, that the innovation can be made a success. But the talent must be carefully sifted, then coached in advance, and properly restricted. This conclusion may be stated with considerable confidence, for it is the unanimous verdict, both as regards the value and the limitation of the plan, of 15 leading universities. In several institutions, notably at Harvard University, experiments were begun early and have ripened into a system. This past

experience, combining encouragement and warning, may serve as a guide to other colleges which, it is hoped, will begin similar work.

But before business experts can be used more largely and more successfully in our universities, attention must be called to the difficulties. In the first place, courses entirely in the hands of business experts, through a series of lectures, are nearly all failures. A regular teacher must take charge, mapping out the course and assigning subjects. In other words, there must be a master mind, a director, continuously in charge. In the second place, the detail of each subject must be sketched out. It appears almost necessary to tell each business expert exactly the limits within which he is to speak, perhaps even giving him the questions in trade or manufacture to which the lecture is to be a reply. Many outsiders, upon appearing before a class of students, proceed to air their views on business ethics and on life in general. It is important to tell these business men that they are asked to speak because they know a subject, that other subjects are covered by other lecturers, and that each speaker will please confine himself strictly to his theme. In the third place, the lecturers must be thoroughly prepared. They must be notified long in advance, and they must be asked to work up not one lecture of an hour, but, let us say, one lecture of three or four hours, and then to condense it into 50 or 55 minutes; for one of the most common complaints made by the universities appears to be that half the lecturers come without having much of anything to say, merely talking in a general way and sometimes closing before the hour is half over.

Mr. WALLACE D. SIMMONS, chairman, committee on education of the National Foreign Trade Council, New York City.—The National Foreign Trade Council, through its committee on education for foreign trade, has obtained from several hundred American manufacturers, merchants, exporters, bankers, etc., expressions with reference to our present methods of education and the extent to which they offer to our young people an adequate opportunity to get a thorough grounding for successful service in connection with foreign trade, either in work in the home office or in the foreign field. The opinions expressed and the suggestions made cover a wide field and a great variety of ideas. One can not help being impressed, however, with the extent to which a large percentage of the replies point to certain few fundamental defects in our educational systems which exist to-day in most of the school districts of this country. These defects appear both in our elementary and our secondary schools. The opinion was generally expressed that the changes most needed are (1) an improvement in the ability to write a business letter expressed in terse grammatical English, (2) the ability to figure accurately and rapidly, and (3) a thorough knowledge of geography both of our own country and of the world at large.

Through the cooperation of business men, it may be possible for the educators of the country to impress our students more thoroughly with the importance of these fundamental things, and also to impress their parents with the relative value of thoroughness in them. The field of opportunity in this direction is so vast and the present variety of available information so great as to make it an exceedingly puzzling problem to know how to begin to coordinate our efforts in some general movement that will make for effectiveness. Other nations have been giving this subject very much more thought and attention than we have during the past one or two generations. If we can not at first cover the whole field in such a way as to enable us to get as favorable results, we should find a way to concentrate on a few fundamentals and expand from them. If we can get the educators of this whole country to teach these few things and teach them as well as they are being taught to the youth of other nationalities, we shall have made a long step forward, and will make possible

further development approaching the standards of our competitors for the trade of the world.

DR. HARRY E. BARD, secretary of the Pan American Society of the United States.—In the preparation for a career in foreign commerce four things seem to me to be of essential importance: (1) A complete course of study of constructive character, which would represent the experience and wisdom of various competent authorities in the field; (2) special methods for the different subjects which go to make up the course of study, including a complete outline of subject matter, proper method of presentation, classroom technique, etc., for each; (3) professionally trained teachers, having each a mastery of the subject matter, special method, etc., of the subject he is to teach and a good understanding of the relation of this subject to the whole; (4) business experts competent to supplement the efforts of the professionally trained teachers by lecturing on special topics in accordance with the general plan and method under the immediate guidance and direction of the teacher in charge, bringing to the students something of the knowledge and experience gained in practical foreign commerce life.

The number of different subjects which merit consideration in preparing a satisfactory course of study is large, and the work of choosing the most important and of organizing these so as to meet at once the demands of pedagogical science and the practical requirements of foreign commerce is such as to engage the best thought and efforts of those most competent for the task.

The work of developing a special method for each of the subjects included in the course of study is even more important. The selection and organization in detailed outline of the subject matter and the development of proper method of treatment and classroom technique can not ordinarily be left entirely to the individual teacher, although room should be left always for the exercise by the teacher of personal initiative and some reasonable measure of original thought. The work of business experts must be considered, and careful thought given to the nature of the subject matter which these experts will be expected to present and its proper relation to the whole.

The business expert will, of course, be a person practically engaged in the field of foreign commerce, who has a special message and is competent to present it. The topic of his lecture will have very definite relation to the subject as a whole. The students will be prepared to appreciate his message by previous instruction and assigned reading, which will be further driven home by subsequent classroom discussions and examinations. Occasional lectures on unrelated topics, even by the most competent business experts, will not give satisfactory results.

MR. B. OLNEY HOUGH, editor of the American Exporter and author of the well-known textbook on exporting.—Schools, and especially colleges, too often disdain not only the motions, but the very spirit of work in the business world for which they profess to be preparing boys and young men, devoting themselves wholly to what may be called the higher aspects of commerce, to theories of tariff and finance, to pure economics, if there is such a thing, instead of to applied business science. On the other hand, it is certain that few business men have either the inclination or the time to take any active or personal interest in the progress of the employees in their own offices. Our apprenticeship system, lacking or woefully weak in the trades, absolutely does not exist in the office.

Undoubtedly the business man can profitably be utilized in schemes for more practical business education, especially in view of the intensifying conscious-

ness of civil and national responsibilities, which is so encouraging a characteristic of the times. Business men are to be found who not only are masters in a broad way, as well as in detail, of the principles and minutiae of their own affairs, but who are generously disposed to do what they can to raise the plane of the country's business life. But none of them are teachers. To ask business men to take into their offices for practical work boys or young men who are spending a part of their day in the schools is, theoretically, an ideal plan, coupling educational equipment, textbook training in theory and the "reasons why" with actual, routine, day-to-day business transactions, and furthermore cultivating habits of method and application. Such opportunities may be earnestly sought and eagerly embraced, but are almost certain to be few. It is to be doubted if any considerable number of employers will be willing to suffer the really severe tax on their time and the inevitable disruption in their offices which such a course is bound to occasion, if the young men are to receive real assistance, even attention. On the other hand, if business men are only to be relied upon as lecturers, supplementing school and college courses, then it will probably be the part of the professional teacher to take his business man in hand, and, through a joint study of the situation, in a spirit of mutual helpfulness, together map out clearly and definitely the exact lines of the business lecture.

The criticism which I have had to make of certain experiments during the last year or two, with business men's talks on export trade to classes in New York, has been that lecturers have been given, or have been allowed to choose, subjects at once too broad and too deep—subjects whose adequate discussion would probably involve a series of 10 or 20 lectures.

The benevolence of manufacturers and merchants of the United States has freely been bestowed on trade and technical schools. Can it not be wisely extended to schools of commerce of a broader description? I have always been particularly attracted by the *bourses de voyage* offered by many a European chamber of commerce to prize students in local business schools. I especially remember reading two really interesting and informing theses submitted after a year of business experience, respectively, in Hamburg and Manchester by students holding such prizes from the chamber of commerce of Algiers. Why should not our American, North, Central, and South American, business men and chambers of commerce similarly encourage commercial students, encourage them by making it easy to acquire that actual acquaintance with and experience in other lands which is indispensable to the closer understanding, sympathy, and community of interests which we preach and seek? To the personal assistance of individual business men to higher commercial education let there be added the broader interests of manufacturers' associations and local chambers of commerce. Support, help, encouragement of individuals is necessary and good. Better, maybe, the official recognition by important bodies of business men of business students' diligence and success. Students from Latin America, following many different courses, are plentiful in schools of all descriptions in the United States; the working, business, postgraduate student from North American commercial colleges is unknown in Latin America.

DR. JOHN F. CROWELL, Chamber of Commerce of the State of New York.—The expert should not be put in charge of directing and instructing those contemplating a commercial career. Commercial education is not well enough organized, however, on the part of teachers to dispense with the specialist. The kind of specialist will depend somewhat on the course of instruction included in the curriculum. For the undergraduate school the general results

of expert experience should be emphasized rather than the special results. Undergraduate commercial instruction should include the following topics:

1. A statistical expert on population, including occupational classes.
2. A statistical expert on natural resources.
3. An expert on the products and distribution of the products of agriculture, manufactures, etc.
4. An expert on the different branches of commerce, including raw materials, manufactured commodities, and miscellaneous.
5. An expert on inland transportation.
6. An expert on maritime transportation.
7. Engineering experts in various fields of construction.
8. An expert on financing commerce, both domestic and foreign.

Instruction in commerce should always be given from the international viewpoint. There should be close cooperation between teacher and expert. In engaging a specialist for an individual talk or two, it is in general a safe thing to ask him to keep in mind three or four main topics and to have a good illustration or two upon each topic. The use of the expert will be very much enhanced if students be held responsible for having certain information on the subject, either by reading beforehand or within a certain period thereafter. Excellent results may be obtained through the use of a single page outline or syllabus of the main topic which the speaker is to discuss. This may cover probably a third of the page of the syllabus; the second third may be occupied with references to several books on the reserve shelves of the library; the third feature should contain a list of 10 questions to show how much the student carried away with him.

JOHN CLAUSEN, manager foreign department, Crocker National Bank, San Francisco.—The people of this country are awakening to an appreciation of the importance for more intimate relations—in business, social, and intellectual activities—with our sister Republics in Central and South America. In the development of closer relational ties our first thought and attention must, therefore, be given to the necessity of acquainting ourselves with the customs and languages of the peoples of those Republics—as also of other foreign countries. Our attention is daily called to the scarcity of available young men who in a competent and honorable manner are qualified to occupy positions of trust and responsibility. To meet this crying demand of the commercial world too little importance is given to the necessity of finding a common ground on which the business man and the educator can meet and solve the great problem for a better cooperation in the national movement of fostering trade relations.

It would seem that the first forward step to devise effective courses of study and developed methods of commercial attainments would be to unite the educational agencies in promoting the move of specialization in instruction for the most direct preparatory training, as covered by the following principal class subjects, viz:

1. History.
2. Modern languages and literature (preference to be given to Spanish and Portuguese).
3. Industrial economics.
4. Commercial economics.
5. Political economy.

A young man with a theoretical commercial training and the additional linguistic attainments brought about by such a course would assuredly prove of infinitely more value to his employer in many fields than one who lacks such qualifications. For the benefit of the scholar a merit system should be



encouraged for appointments, into the staff of commercial and banking institutions engaged in foreign trade, of worthy graduates who in their sphere of endeavor have demonstrated their fitness to occupy such positions of junior posts.

The laudable activities of institutions such as the Young Men's Christian Association and the American Institute of Banking can well be considered criterions in the demonstration of the desire for education along commercial lines, when it is considered that even members of advanced age studiously devote their evenings in acquiring the essential points of business training which were not afforded in their younger years of schooling.

It is of interest here to note that the San Francisco Chapter of the American Institute of Banking offers every opportunity to its members for the acquisition of a broader knowledge in banking and finance, commercial laws, accounting, public speaking, as also in the study of the Spanish language, which only recently was inaugurated in the interest of better Pan Americanism, and the institute now boasts a class of 135 pupils who are enthusiastically lending every effort to the successful mastery of this linguistic attainment.

The paper of Mr. Wilbur Carr, director of the consular service of the United States, invited for this session, was presented before the above-mentioned educational conference on foreign service training, and will be found in the report on that conference. Keen interest was shown at all times in the papers of this session, several of which were discussed at great length from the floor.

Mr. JOHN F. CROWELL remarked:

The expert is the hard man to find. This is not because he does not exist, but because he is working in a particular field. One of the main difficulties is that the average school-teacher is not acquainted with a large number of business men. The man who teaches commercial education and does not make at least two new acquaintances in the business world every day is a failure. But when we come to specialists, we have to hunt for him in the business world. We should go to him and tell him to come up before our boys and tell them what he does in the handling of a particular line of goods. He will come before the pupils and tell them where the article originates, how it is distributed, what depots there are for meeting the national and international needs, and why they are located at Shanghai rather than at Hongkong or Harbin; what is the object of maintaining this kind of organization rather than that kind; what kind of implements are sent to this country or to that, and why. The youth will grasp the idea. He will talk to them in such a way that the boys will have a mental picture of the country, of the conditions, and they will, as the bent of the boys naturally is, want to go to that field.

When you come to the problem of transportation you can go out and get a man like the traffic manager of one of our trunk lines and bring him before a group of boys, and he will tell them of how tens of thousands of cars are handled, how they are moved from, for instance, Pittsburgh to the seaboard. He will tell the students of a concrete instance where a man arranges for the sale of a large quantity of commodities, say, 10, 20, or 30 carloads, but is unable to get them to destination and close the sale, and may be compelled to dispose of them by auction in order to protect himself. These things mean something to the boys. There is not an expert that can not light up the dull theme of arithmetic, for example, by applying its principles to the huge business of transportation.

Take the marine expert. You can get a man who has spent all his life in the shipping business, and he will come to a class and ask what is the average tonnage of ships built in the United States in a year. Teachers, as a rule, do not impart to boys such information as that. Their mind has not been trained in that direction. The mind of the expert has. Therefore, while you, on the one hand, do not put such questions as the one I have suggested, the expert in marine shipping would naturally think of such a question at the very outset of his talk with boys.

Prof. JOHN E. TRELEVEN, representing the University of Texas, spoke of the effort made by that institution to use the expert in its business training courses. In part he said:

We have first tried to select our men with unusual care before we have extended an invitation to an expert to address our students. We have selected the expert with an eye to the probability, as near as it could be determined, of his delivering to them a logical, practical, and beneficial talk. In the second place, we have been trying to prepare our students to listen to the lecturer. We have been trying to prepare them by some systematic course in the same line as that upon which the expert will address them when he comes into the classroom, and by means of assigned readings. In the third place, we have made it a point to have a conference with each person who is to come in contact with the boys. We have also made it a point to talk to the latter themselves before the lecture is given by the expert. Usually, when our professor visits the expert, he does so in his own office; that is, the office of the expert. He talks with him about his work, finds out the things in which he is particularly interested, and helps the expert to furnish the materials which he will use in the presentation of his lecture to our classes. We have found that if we take the expert out of the formal atmosphere of a classroom, he does better work. Then, in the smaller classes, we ask him in to a round-table discussion, either in the homes of professors or in the lounging rooms of the school. In the larger classes, we ask the expert to meet our classes in the lobby, where there are easy-chairs, and where the expert does not feel that he is delivering a formal lecture. The professor is furnished beforehand with a line of questions to which he wishes answers. This line of questions furnishes the basis for the expert's talk, and this serves to keep the lecture within the bounds intended.

Mr. E. L. Werthéim, of the Young Men's Christian Association, West Side Branch, New York City, said:

Out of 3,600 students last year who came to us to study something along definite commercial lines there was collected over \$90,000. That is one association.

The matter of getting men to lecture is of especial interest and importance. The expert has a contribution to make to the cause of education, and if we can guide him we are doing something that is well worth while. You will find that if you ask an expert to come in and speak, he thinks it necessary to go immediately to the library and read up on his question, rather than take something he is dealing with constantly, daily, and that will be of much more interest than anything he could prepare on. The man who tells of the things that are of everyday occurrence with him is the man who will be the most beneficial to the men and boys.

I am afraid we have not in the past sufficiently recognized the dignity of commercial education. We have not sufficiently recognized, in practice, the fact

that men fail in business because of the lack of proper training. I wonder whether commercial education will receive very much attention in the future unless we begin now to give more attention to it. We have schools, secondary schools, which prepare boys for college. There we have preparation. Why is it not just as possible to spend a portion of the preparatory period for training the boys to take their places in the commercial world, rather than to step from the secondary schools into the college? Isn't the one as feasible as the other?

Mr. S. P. Capen, the acting chairman, specialist in higher education of the Bureau of Education of the United States, remarked:

It seems to me that the profession of business, which is becoming recognized as a learned profession, is itself undergoing the experience of older learned professions. Originally all professional training was in the hands of the practitioner, and you must suppose for the professions a condition very similar to that in which commercial training now finds itself, commercial training being largely in the hands of the practitioner or the expert. This is for two reasons chiefly: First, that you have not enough trained teachers, or teachers trained in exactly the right way for your needs in training others in the profession of business; and, secondly—and this seems to me most important—as I judge from what has been said here, that you have as yet no recognized teaching content. Is not that the case? Isn't it necessary, first of all, to know just exactly what knowledge shall make up your higher courses of commercial training, and isn't it necessary to organize that knowledge into a system, to organize, in a word, a teaching content, and turn that over to the teacher? It is only the occasional expert which you now get in schools of medicine and in schools of law. In medical schools the teachers give almost their entire time to the work of teaching. The same is also true of the law schools. I anticipate it will be true of the schools of commerce and business administration in a very short time.

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### THIRD SESSION.

The third session was held Wednesday afternoon, December 29, at 2.30 o'clock, in the Pan American Union Building. Mr. Roger W. Babson presided.

Papers of a general character on commercial education in Latin America, Germany, and England were presented.

#### COMMERCIAL EDUCATION IN LATIN AMERICA.<sup>1</sup>

By EDGAR H. BRANDON.

The traditional form of education in Latin America, in both the secondary schools and the universities, was distinctly cultural. This type descended in direct line from the old colonial universities, modeled after the medieval universities of Spain, and continued in the national universities after the independence of Latin America. It was an education that looked forward distinctly to the so-called liberal professions, the priesthood, the law, and somewhat later, medicine. The curriculum of the secondary schools was formed in harmony with this tradition. In former times it included the classics, studies in literature and philosophy, with a relatively small amount of mathematics and

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<sup>1</sup> Author's abstract.



little science. In more modern times the classics have been generally replaced by modern languages, but the study of mathematics and science has always remained overshadowed by the so-called cultural and liberal studies.

This being the status of the traditional university education, it became absolutely necessary in the commercial period of the latter half of the nineteenth century to establish schools distinctly devoted to the study of commerce and business administration. The crying need of such institutions was emphasized by the commercial development of Latin America. As long as this section of the globe remained in the semi-isolation that was its lot until the middle of the nineteenth century, the old classical and liberal education satisfied the needs of the country, but with the development of commerce a reform was imperative, and it seemed much easier to educators to institute a distinctive type of commercial schools than to engraft the idea of a more practical education on the older and established forms.

The Latin-American mind lends itself readily to commercial education, which in its broadest form must be liberal as well as technical, and include the modern commercial languages, a very considerable amount of history, geography, and political institutions, as well as economics and accounting. When once the need was fully recognized and commercial schools began to be established, they met with unusual favor. Their establishment and development in the different countries of Latin America has been in direct ratio with the commercial advance of the country. In very few cases was their origin similar to that of the so-called business colleges of the United States, and likewise it was not often that their establishment was due to individual initiative. On the contrary, in almost every case it was by act of government that the schools were established, and they have been from the very first an integral part of the national educational system. As at present constituted, they are of different types or grades. At the top of the list are the colleges or higher schools of commerce, such as the one at Buenos Aires which is a part of the University of Buenos Aires, and the one at Santiago, Chile, which, although not connected with the University of Chile, is of a rank that almost, if not quite, equals that of a university faculty. The more common grade, however, is the secondary school of commerce. This grade does not always require a completion of the studies of the elementary schools for admission. There are often two or three classes below the ordinary rank of high school, and two or three classes above the entrance grade of a high school. This is the type of the ordinary schools of commerce in Chile. Nearly every town of importance in this Republic has a commercial school of this grade.

In some countries the commercial school is a section of the regular high school. This system of organization is in vogue in Cuba and Peru, for example. The entrance requirements to the section is the same as for the other sections, but the course of study is distinctly of the commercial type. The commercial high school or the commercial school, which is a combination of the upper elementary grades and the lower high-school grades, usually attracts a different class of students than the traditional and literary high school. The latter remains the school of the upper classes, since it leads on to a university career. The former is patronized by the middle and lower middle classes who are engaged in commerce.

It is for this reason that the separate installation of the separate school is usually thought preferable in Latin America, and it has only been for reasons of economy that the commercial section has been introduced into the regular high school rather than erecting a separate institution. There is the fear that the older type of secondary education will absorb the newer and

prevent it reaching its fullest development. This is a condition imposed by the social structure of Latin America.

No part of the public education in Latin America has to-day a greater appeal to the whole public than has the commercial school, notwithstanding the facts mentioned in the preceding paragraph. A liberal profession may still be looked forward to by parents as the desirable one for their own sons, but none fail to recognize that it is the practical education which will bring the greatest material benefit to society. For this reason business men of means and commercial associations take an active part in fostering the commercial schools in their locality, and in aiding the institutions to acquire an installation and equipment adequate for this purpose. Gifts of material, of money, and of service are often made, and local business houses apply to the schools for trained young men for positions in their business.

Commercial education in Latin America is of recent foundation, while there were some ephemeral institutions toward the middle of the nineteenth century. It was not until about 1890 that the Governments took up the matter in a serious way, and the national schools of Chile and Argentina date from the last decade of the nineteenth century. The same is true of Mexico, and the other countries followed at an even later date. At the present time there are either separate commercial schools or commercial sections in the high school in practically all the countries of Latin America.

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## COMMERCIAL EDUCATION IN GERMANY.<sup>1</sup>

By FREDERIC E. FARRINGTON.

Germany has long been a fruitful source of educational inspiration to the American student, but this has largely been confined to the traditional subjects. Commercial education represents a field hitherto little noted by American investigators.

During the 25 years from 1882 to 1907 Germany underwent a marvelous transformation from an agricultural to an industrial nation. The education of the German youth for commerce has played its part in this change. In Germany specialization is the order of the day. Every effort is made to find out early what a lad can do best, and he is then trained thoroughly for that particular work and for no other. All this results in a vocational stratification which parallels the social stratification so characteristic of German life.

Germany has two distinct educational systems, one for the masses and the other for the classes. Commercial education cross-sects them both, and appears in three degrees or levels—lower commercial schools, middle commercial schools, and higher commercial schools. The first, beginning at 14 years of age, is represented by the continuation school, a part-time school demanding the pupil's time for six hours per week for three years. Here one finds a high degree of specialization, the youth being trained for a particular line of commercial work. The instruction is more or less theoretical, paralleling closely the practical training the youth is receiving *pari passu* with his employer. Compulsory continuation schools for boys are found in 12 of the 26 States of the Empire, and for girls in 4. In 1907, of the 460 German cities with 10,000 and more inhabitants, 291 had continuation schools, and in 220 of these attendance was compulsory. Commodities of commerce and training for citizenship are noteworthy subjects of study.

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<sup>1</sup> Author's abstract.

It is the necessity of commercial subjects are closely attached to the regular secondary school system and the fact that the present has prevented this grade of commercial education from attaining the prominence of the success which characterizes the other type of commercial schools. A variant of this middle commercial school is found in some of our cities wherein a more advanced and more complete type of training is given. This represents a progressive attitude toward the commercial education of the other type of regular secondary schools and responds more closely to the changing needs of modern life.

In the history of the commercial schools appear the colleges of commerce, which were at first a part of the public universities, with which they are now joined as a part. The establishment of the commercial college is the result rather than a contributory cause of Germany's commercial progress, but it is to be seen in the future to enhance that progress even more. Training for the civil and naval service together with opportunities for modern language training are perhaps the most striking features of colleges of commerce. Private and voluntary activity figure largely in their foundation and support and show the phase of the spirit of cooperation which brings out the most important lessons we can learn from a consideration of German commercial education.

## COMMERCIAL EDUCATION IN ENGLAND.<sup>1</sup>

By I. L. KANDEL.

The provision of commercial education in England is of recent origin, and dates from the beginning of the present century. The causes for this slow development have been the great success of English trade and commerce during the nineteenth century, which was due not to specialized training but to a wealth of natural resources and a native bent for mercantile pursuits. To this was added the opposition of educators, on the one hand, to early specialization and vocational preparation and their belief in the value of a general education as a foundation for life occupations, and, on the other, of employers who prefer to train their own employees through the actual routine of the shop and office and see no value in theoretical training. The present development of commercial education has been due to the agitation of a few men at the close of the nineteenth century, to the increasing severity of foreign competition, and to the success attained by competitors largely through training. An important element has been the establishment of examinations in commercial subjects conducted by such national bodies as the London Chamber of Commerce, the Royal Society of Arts, and the Union of Lancashire and Cheshire Institutes.

The facilities for commercial organization are not systematized, but they follow three main directions—the training of boys and girls who can remain at school until the age of 15 or 16, courses in evening continuation schools for those who are engaged during the day, and courses of university grade leading to degrees. It will be noticed that the secondary schools hardly provide instruction in commercial subjects, and this for the reason mentioned above—the educational opposition to providing special preparation in schools whose chief function is conceived to be the imparting of a general education. The first type mentioned above is in an experimental stage and has attained completeness only in London in what are known as "central schools," to which boys and girls are drafted from local elementary schools at the age of 11 for four-year

<sup>1</sup> Author's abstract.

courses, one of which may have a commercial bias. The preparation is of a general character, only the elements of the technical branches being taught. The evening continuation schools furnish, among other courses, organized commercial courses of four or five years' duration. The schools are open for about 30 weeks a year, and students may attend on three evenings a week. Efforts are made to secure the cooperation of employers. The work of the first two years is general in character, and in the third and fourth years there may be specialization according to the different branches of commerce. The last year offers advanced work in language and special branches. The course includes commercial arithmetic, English, geography, shorthand or bookkeeping, commercial correspondence, a modern language, and office routine, with economics, accountancy, commercial administration, banking, commercial law, etc., in the advanced courses.

Finally, the present century has seen the development of faculties of commerce in the new universities and university colleges like Manchester, Liverpool, Birmingham, London School of Economics, Nottingham, Reading, and Southampton. The courses are organized in connection with the faculties of commerce and the advice of local chambers of commerce, and other commercial interests is enlisted. Diplomas are awarded usually after two years' work, and degrees at the close of three. The subjects of study include modern languages, statistics, accounting, banking and exchange, commercial geography and history, economics, the organization of commerce and industry, and commercial law.

Progress has been slow in England in this field, but the development has begun and a new stimulus has been furnished by recent events, and increasing attention is being given to the subject by the Government and unofficial authorities which will undoubtedly lead to more rapid advance and increasing recognition of the value of training in the future.

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#### *FOURTH SESSION.*

The fourth session of this subsection was held Thursday morning, December 30, 9.30 o'clock, in the Pan American Union Building. Mr. Roger W. Babson presided.

The following is a résumé of Director Grinfeld's paper:

##### **MODERN BUSINESS AND COMMERCIAL EDUCATION.**

By ISAAC GRINFELD.

In spite of the nature of modern commercial transactions, the underlying motives for preparation are the same to-day as they have always been. The technique of buying and selling is, however, so intricate and the latter carried on on so vast a scale that educational preparation, presented in a scientific and adequate manner, is absolutely necessary. Three men play an essential part in a commercial transaction to-day the success of which depends upon their training as experts; e. g., buyer, salesman, and the organizing and administrative head. The expert buyer must have a thorough knowledge of the articles manufactured or sold by his firm, and the sources of production, markets, and prices for the same. Schools must aid, supplementing actual practice, in furnishing this knowledge. This information can be best given in special schools,

as this is a day of specialization. For example, industrial chemistry, applied mechanics, and electricity, necessary for certain buyers, can be better taught in technical institutes, provided they be taught in a special group of commercial technology, than through courses in these same subjects in regular schools of commerce. Most schools, whatever their character, can offer a course in buying and selling with reference to the products in the study of which the school is engaged. In view of the present-day specialties, such a procedure would be best. Commercial preparation is only possible, however, in a school organized for that purpose where due respect is given to economic considerations and less to industrial and legal. This view needs to be encouraged in the Latin-American countries, where too much attention is given to the legal aspects.

Preparation for the salesman and the advertising expert is no less important a branch, but has been considered of even less importance in the Latin-American countries. The agent or broker carries on here the work of buying and selling. This system of brokerage, however, is a failure largely through the inadequate preparation of the broker and the character of the class from which the agent is recruited for this work. On the other hand, no subject is given greater attention in the United States. Extra-mural courses, like those of the International Correspondence Schools and the Alexander Hamilton Institute, demonstrate that buying and selling can be taught. Further, large industrial and manufacturing concerns have established highly successful schools in connection with their plants, where their salesmen are not only instructed thoroughly about their own products, but are given a fairly satisfactory course in commercial training. The training course in publicity or advertising is one of the most important subjects to be considered in these special training schools. Thousands of dollars are lost annually through the incompetency of those engaged in this work. More and more such loss is being reduced in the United States through the employment of men trained in the salesmen's training schools. The profession of salesmanship must be given greater dignity. Pupils engaged in the study of it must be given a clear comprehension of general business principles, supplemented later by a specific knowledge of each particular business.

Of greatest importance is the training of the organizing and administrative heads. The qualifications for these two branches of business service are different, but the same person is frequently called upon to act in this double capacity. The knowledge of general principles in reference to the economic forces that affect his business are of greater importance to the organizing chief than to the administrator, to whom the knowledge of accounting, office practices, and daily trade movements are necessary.

Elementary schools of commerce prepare largely clerks; the higher schools, experts in buying, selling, and advertising, organizing and administrative chiefs. The latter schools, owing to the complex character of society to-day, must include studies that will furnish culture and arouse in the students lofty aspirations. The lower schools must inculcate the spirit of patriotism, the higher schools establish a sense of social and industrial justice. The instruction given, however, must be practical above all. Practical courses must be given whereby students may be trained to observe and coordinate phenomena of interest to them, and to test their own productions by comparing them with actual results. The problems studied should be similar to those with which the students will be confronted in the practical business world.



The acting chairman read the following abstract of the paper by Prof. Bennett:

**PREPARATION FOR A BUSINESS CAREER IN CHILE: LATIN-AMERICAN STANDPOINT ON BUSINESS EDUCATION.**

**By FRANCISCO A. BENNETT.**

The Instituto Nacional of Santiago de Chile, established in 1813, holds to-day a leading position among the secondary training schools. The Memoria Ministerial of 1889 contains plans for the establishment of training schools of commerce. Vocational training in agriculture and mining had been developed prior to this date. The Instituto Comercial of Santiago was established with the hope of creating a college of commerce similar to the college of commerce of Antwerp and the college of advanced commercial studies of Paris. A Belgian gentleman was invited to organize and take charge of the school. The idea of establishing a commercial university was then abandoned, and a plan proposed to establish instead practical schools like the Italian technical institutes. The disparity in plans proposed has resulted in creating a type of school similar to that which the chamber of commerce of Paris maintains in the Avenue Trudaine, or to the German, Austrian, and Italian schools of the same grade. There are at present in Chile schools of commerce in Santiago, Valparaiso, Iquique, Antofagasta, Concepcion, Arica, Vallenar, Coquimbo, Talca, San Carlos, and Talcahuano. The Instituto Comercial of Santiago is called the Instituto Superior de Comercio. The institute has a training course for professors and teachers of commercial subjects.

Commercial education is under the general direction of a council, the president and secretary of which are, respectively, the minister of public instruction and the visitor of commercial institutes. A more or less uniform content of instruction for these commercial institutes is the following: English, Spanish, bookkeeping, typewriting and stenography, commercial geography and history, commercial arithmetic, natural sciences with direct reference to commercial products, political economy, commercial law, commercial writing and commercial practices.

In the Commercial Institute of Valparaiso, which we shall take as a model, the course is one of four years. The first is devoted to studies of general knowledge; in the second are introduced elements of commerce and commercial arithmetic; the third is given up to commercial theory; and in the fourth the studies are of a more practical nature and are completed by work in the "model office." Students and graduates of the institute easily find remunerative positions in commercial houses.

In Chile, as in the larger part of South America, importing and exporting business is carried on largely by foreigners. In view of this fact the commercial institutes prefer to give courses that will train the native clerk, merchant, and clerks for foreign commerce. The idea of the institute of Valparaiso is to prepare young men to enter commercial establishments, and, after they have learned the methods practically, to enable them to organize on their own account and later to help enlarge Chilean business enterprise. Some of these schools also consider for their graduates work in connection with the customs, consular service, railway administration, the teaching of commercial branches, etc. For the present there does not exist the official position of commercial expert.

The Latin-American point of view in regard to commercial education is rather that of the German Handelsschule than the American business college, which

stresses the application and use of certain technical acquirements. A young man, possessing a thorough training and a well-informed mind, can use his novitiate in any mercantile branch to greater advantage and advancement. The young Latin American with lively imagination wishes to know always cause and effect in the pursuit of his studies and labors. The Institute of Commerce, further, believes the literary course and school prejudicial to a successful commercial career, and is opposed very much to receiving students from the "liceos." It prefers to take students between 10 and 11 years of age and give them the necessary general training basic to later courses of a more special commercial character which will enable them at the age of 15 or 16 to take a position as a "junior" in commerce. For those unable to take this course of training in this manner there are schools similar to the American business college. Some schools of commerce and nearly all of the private schools have night schools for this type of student.

Commercial education on the whole only occupies at present, as a branch of public instruction, a secondary place in Chile. In time, as this phase of education improves, the commercial schools will prepare through systematic and organized knowledge for a higher professional career.

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### THE ARGUMENTS FOR A SEPARATE OR COMBINED COURSE OF COMMERCIAL STUDY—THE CURRICULUM OF A SCHOOL OF COMMERCE.<sup>1</sup>

By ROSWELL C. MCCREA.

The organization of the curriculum of a graduate school of commerce and business administration is relatively simple. The curriculum of such a school may well be highly technical, narrowly confined to business problems, and conducted by methods of instruction which largely follow the research plan. The ideals and methods of such a school are strictly professional. The school of commerce of undergraduate type likewise has professional ends, but its ideals are less strictly vocational, and its methods more closely approximate those of a college of liberal arts. The main variation from the scheme of the college is in the content of courses. A school of commerce may so organize its four years of study as to realize most of the primary aims of college instruction in discipline and breadth of view, and at the same time lay foundations for speedy adaptation to the requirements of later business life. There should be training in the fundamentals of business science and practice. But general educational aims should ever be in the foreground. Courses other than strictly technical ones must be woven into the curriculum in such a way as to develop on the part of the student liberality of view, intellectual perspective that extends beyond and behind purely contemporary phenomena, a socially minded attitude toward public problems, and a mental discipline and grasp of scientific and philosophic methods.

To be more specific, the curriculum of a four-year student should include not only required courses dealing with broad fundamental aspects of commercial and industrial organization and activity, but as well properly devised courses in English, history, psychology, economics, politics, sociology, and biology or chemistry.

I have omitted mathematics and foreign language work from the list of required studies. From the standpoint of utility, college mathematics is ordi-

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<sup>1</sup> Author's abstract.

narly not of fundamental importance in the equipment of the business man. For purposes of mental discipline there are various substitutes for mathematics. For training in analysis there is ample scope in the study of accounting, of political science and business law, where the case method is used, and of economic theory.

Foreign-language study is usually urged because of the discipline it affords, because of its utility in intercourse with foreigners, and because it opens a new avenue to an understanding of the literature and life of other people. From the disciplinary standpoint the disadvantage is that results are hardly commensurate with the time spent in study. Equivalent discipline may be secured more readily in other ways. From the standpoint of practical serviceableness the great difficulty is that not more than 1 student in 25 gets enough out of his course to put it to practical use. For the few who may have subsequent use for a language, ample provision should be made; but the many should not be forced into a meaningless routine looking toward ends that are not realized. The opening of new fields of culture is quite as vain for the usual student as the utilitarian ideal.

With reference to the order of presentation of studies, advantages preponderate on the side of a mixed scheme. In the freshman year the student should be placed in intellectual touch with his environment—physical, economic, social—and taught how to use its component parts. The second year should emphasize mental processes so that he can turn to principles developed in the first year's work and apply them more fully to practical affairs. Two such years should develop a viewpoint, often so sadly lacking in the amorphous preparatory years, and should awaken enthusiasm and help toward an interpretation of the world of affairs. The last two years should be both more general and more specialized. The business man must have breadth as well as special training, for he touches at some point the social, economic, and cultural problem of his time. It would seem unwise to exhaust the first two years of his course in elementary liberal studies, and then compress in the last two years the routine tasks that prepare for his future career.

Let a study of the fundamentals of the physical and business environment exert its influence during the first years while the boy's preparation for his career is receiving initial impetus; and do not narrow the horizon in the last two years by an intense specialization that will result in efficiency at the cost of a restricted intellectual growth.

The university school of commerce is a modern college. Its function is to stand side by side with the modernized college of arts and sciences in the effort to revivify and extend culture studies, to afford special training and to yield a clearer insight into the complicated relations of modern life, whether in business, the old professions, or in the broader field of social service.

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## HOW TO SECURE PROPERLY PREPARED INSTRUCTORS FOR COLLEGES AND UNIVERSITIES IN COURSES ON DOMESTIC AND FOREIGN COMMERCE.<sup>1</sup>

By JAMES O. EGBERT.

The expression "domestic and foreign commerce" may be described in general as standing for the interrelations of trade as maintained at home and

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<sup>1</sup> Author's abstract.



abroad. When, however, it is considered as a subject of instruction in our institutions of learning, it evidently has a wider significance, inasmuch as it apparently includes the study of business, a term used in its broadest sense. It will be well, therefore, to modify the title of our theme by substituting the word "business" for commerce.

We must consider first the development of commercial study in the American college and then the place it holds in such institutions. Early schools of business were developed in large cities; they were private institutions. Then followed the high schools of commerce. These prepared many young people for a business career, but served another purpose in calling attention to the need of training of a more advanced character.

Political economy was the predecessor of the various related subjects of economics now admitted into the college curriculum. Finally the graduate courses were established. Then it was realized that a more complete and independent treatment was necessary, and schools of commerce of a collegiate and university grade were begun. There are three types of these schools to-day: The school of commerce, which takes the period usually assigned to the college; then the professional school of business, built on a partial collegiate career; the third type is the graduate school, as existing now at Harvard.

In our desire to secure instructors for such schools we must understand that these schools must be operated for a double purpose, the training of students for a business career and the preparation of those who will serve as teachers in the higher institutions of learning devoted to business as the subject of instruction. The preparation of a larger number of instructors in these subjects is vitally necessary. We can not expect in general to draw our teachers from business life. The teacher must be trained and must be qualified to impart knowledge. Three important facts should be recognized: First, the colleges have been preparing students for instruction in the secondary schools and not for the colleges; again, graduate students tend at present toward the theory of business. The laboratory method is almost entirely neglected. We must first establish a profession of business and receive more recognition in the colleges. The professional school of business must form the background in the education of teachers. The practical or laboratory work must not be forgotten. Business houses may cooperate with the schools of commerce and afford an apprenticeship to the students, who may there receive practical experience. Colleges of business must be carefully organized with an understanding as to the possibilities of specialization. The problem will be solved by regulating, adapting, and developing agencies now existing and emphasizing the profession as the center of interest.

If we consider our theme as concerned with the special subject of foreign and domestic commerce, we should recognize the importance of securing instructors trained in commercial geography and the colloquial use of modern language, and particularly in the institutions of the countries with which trade is desired. The cooperation of business firms will be invaluable in this particular. Finally, we must secure suitably trained instructors by requiring a general education, followed by professional training, with opportunity for specialization and for practical experience.

**WHAT CAN THE SMALL COLLEGE DO IN TRAINING FOR BUSINESS?<sup>1</sup>**

By **GEORGE W. HOKE.**

Three points are prominent in this discussion:

(1) The function of the college is to develop ability in its students to give efficient and versatile response to environment.

(2) One-sided response of the college product is due to the fact that experience in the promotion and administration of affairs has no adequate representation in the training given by the college.

(3) Certain readjustments are necessary to meet this situation: (a) The organization of a system of academic and vocational guidance; (b) the establishment of functional relations between the various departments of the college; and (c) the grouping of a series of prebusiness courses.

The chief obstacle to training for business is the conservatism of the college faculty. They do not seem to realize that such training is not an innovation, but a return to the functional responsibility of the college, made necessary by the acute maladjustment of its product to life. Three instances are selected to show the need of training for productive service:

(1) The conservation of resources is too serious a responsibility to intrust to men without adequate training and foresight.

(2) The organization of modern business demands a type of management that can be provided only by men trained in psychology and scientific methods.

(3) Changes in standards of behavior, incident to our complex régime of mutual dependence, require a trained insight into problems of conduct and responsibility.

Six general qualifications are necessary for the efficient conduct of affairs:

(1) Vision, i. e., the ability to see the signs of opportunity and responsibility.

(2) Mastery of scientific method, i. e., ability to organize a situation with economy and efficiency.

(3) Understanding of human nature, i. e., ability to anticipate mental reactions.

(4) Capacity for self-expression, i. e., ability to deliver an acceptable message by word or deed.

(5) Capacity for recreation, i. e., ability to take leisure after labor, and make it profitable.

(6) Capacity for productive service, i. e., ability to recognize standards of worth more fundamental than financial profits.

From the day that a boy enters college he should have sympathetic advice, and his course should be routed to meet his specific needs. The departments of the college should remember that they are conducting partial processes only and that their work should conform to the standards of quantity and quality set up for the final product. The college should insist that every student acquire, before graduation, interest and knowledge in some specific field of the world's work. Upon graduation the college should do all in its power to place the student where he will do the most good.

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<sup>1</sup> Author's abstract.

*FIFTH SESSION.*

The problem of commercial education, as this refers directly to elementary, secondary, and higher schools, was discussed at the fifth session, which was held Thursday afternoon, December 30, at 2.30 o'clock in the Pan American Union Building. Mr. Roger W. Babson presided.

**ELEMENTARY SCHOOL COMMERCIAL EDUCATION.<sup>1</sup>**

By F. G. NICHOLS.

There is at present a growing demand for an elementary school commercial course to take its place with other seventh and eighth grade vocational courses. The purposes of such a course may be stated as follows: To provide vocational education for a part of the great number of children who leave school before the high school is reached; to hold boys and girls in school a year or two longer; to interest more pupils in a complete education for business; to increase the pupil's knowledge of the opportunities that are open to him; to develop in boys and girls, by concrete instruction, business habits so essential to the largest measure of success in any field of human endeavor; and, in short, to make the seventh and eighth years count for more in the child's education.

It must be kept in mind by those who would frame such a course that it must be essentially vocational; that it not only must be vocational, but it must be within the easy comprehension of the boys and girls of the seventh and eighth grades; it must also be suited to the occupations that are open to such boys and girls; it must be planned with regard for local requirements; it may well be differentiated for the two sexes, in view of the existing differences in occupational opportunities open to each; it may also be planned with reference to urban or rural requirements. It is also important to remember that while early choice is extremely desirable, irrevocable choice at such an early age will always produce much harm unless the paths from one course to the other are kept open as long as possible. Further, it is well to recognize the fact that secondary education can not be forced downward into the lower school without such modification of subject matter as the immaturity of the grammar-school children makes imperative. It may also be suggested in this connection that the traditional business course of the secondary school is rapidly undergoing reorganization to meet the demands of modern business. It must, therefore, be apparent that the old bookkeeping and shorthand course will not meet the needs of the grammar-school boy and girl.

In the junior high schools of this country elementary commercial courses have been organized. Almost without exception they include commercial arithmetic, bookkeeping, shorthand, typewriting, commercial geography, business writing, and English. They do not differ materially from the secondary school commercial course, notwithstanding the important fact that much of the subject matter is beyond the comprehension of grammar-school children, or the more important fact that boys and girls of grammar-school age are not wanted as bookkeepers and stenographers.

A better course of study that is in harmony with the principles set forth above is one that includes the following subjects: (1) English, with special emphasis on spelling, vocabulary building, punctuation, simple business letters,

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<sup>1</sup> Author's abstract.

and easy descriptive work both oral and written; (2) business arithmetic, with special emphasis on topics suggested by local conditions; (3) business writing that will insure the mastery of a good business hand; (4) commercial geography, with special emphasis on place geography in general and on local vocational geography in particular; (5) civics, elementary in character and for the sole purpose of developing a high type of citizenship; (6) typewriting for its vocational value, and also to develop accuracy, concentration, neatness, etc.; (7) first lessons in business, to inculcate business habits, to teach simple record keeping, to acquaint the pupils with simple business practice; and at the end of the course to link up the elementary commercial course with the high-school commercial course in such a way that every pupil in the former will want to continue in the latter. Physical training, physiology and hygiene, industrial work for boys and household arts for girls will all receive the usual attention in this course.

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### COMMERCIAL EDUCATION IN SECONDARY SCHOOLS.<sup>1</sup>

By PAUL MONROE.

There are two hindrances to the development of adequate provision for commercial education in the secondary schools of the United States: (1) The general prejudice in favor of the traditional literary education; (2) the feeling against any differentiation in our school organization which involves special treatment of different groups of pupils. The first feature implies emphasis on preparation for the leisure activities of life; the second renders difficult the consideration of technical preparation of any sort.

It is this differentiation of the school system into a variety of kinds of schools that is the chief characteristic of the system of Continental Europe, and to a less extent of South America. In place of this we have in the United States a prolonged elementary course and a briefer secondary course which is but slightly differentiated and is of the same length for all.

These two characteristic features are now undergoing changes which may ultimately be quite radical. These changes, so far as they have progressed, will explain the present status of commercial education.

Commercial, like industrial, education is education stated in terms of production, rather than in the ordinary cultural terms of consumption. In the United States natural resources and opportunity have been so great that it has been unnecessary until recently to organize education in terms of production. Now, with our approach to the marginal standards of the older countries and with the great influx of unskilled labor, a new attitude is necessary.

For fifty or seventy-five years we have had numbers of private commercial schools which afforded routine training for routine business procedure. At present there are probably 2,000 such schools giving training to 200,000 students. For some twenty-five years we have supplemented this means of preparation with business courses in our public high schools. Nearly 2,000 public schools now offer some such courses and reach about as many students as do the private schools. The public school has the broader curriculum, but the private school has the advantage of closer contact with business.

The problem for the immediate future is such an organization of secondary education as will place within the reach of every youth in the country the op-

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<sup>1</sup> Author's abstract.

portunity for a commercial or an industrial education which shall not only prepare him for the business of life but at the same time be a genuine education. The problem is a wholly different one from that of the private business school. The new curriculum must include a greater variety of subjects. It must consider business from the social and the national as well as the individual point of view. Many problems in the organization and control of these schools have arisen and few have been finally solved. Satisfactory solutions await a longer experience.

A further need is for the awakening of the public to the necessity and the problems of commercial and industrial education. There can be no permanent progress until the people as a whole realize that economic advance, as well as political and social stability, depends upon an adequate preparation through education for dealing with industrial and business processes. Modern democracy demands as a guarantee of its well-being an increased attention to these types of practical or vocational education.

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The following is a résumé of a paper on the same subject by David Snedden, former commissioner of education of the Commonwealth of Massachusetts.

### COMMERCIAL EDUCATION IN SECONDARY SCHOOLS.

By DAVID SNEDDEN.

At least 350,000 pupils are studying in commercial departments or courses in the schools of the United States. These figures express quite definitely the demand for commercial education in the United States. They do not clearly measure the extent to which occupations of a commercial character finally require or absorb all these young people; but they bear eloquent testimony to the fact that parents see in these occupations desirable opportunities for their sons and daughters. Let us analyze, first, the character of the thousands of pupils taking commercial courses and, secondly, the general character of the instruction offered.

For upward of half a century private and public commercial schools and departments in high schools have offered the most accessible and inexpensive opportunities available for an education of secondary grade that seemed to have a definite vocational outcome.

Hence, a vast army of young people, attracted and sometimes fascinated by the alleged large possibilities of success in business careers, have sought the instruction and training offered through commercial courses. Often these youths have been under economic necessity to seek employment early; often, too, they have either lost or else never developed interest in or capacity for the general studies of high school and college. Classes in commercial studies generally show a large percentage of students of mediocre ability and also a considerable percentage pathetically eager to get the equipment necessary to early entrance on wage-earning employment. Into these classes have been forced or have drifted pupils not bright enough for the college preparatory work of the high school. What have these pupils received? At all times the larger part of the education could be divided into two kinds—(a) a variety of definite forms of training in skill and (b) a variety of forms of instruction in organized bodies of knowledge of a commercial character.

Judged by any adequate standards, commercial education in the United States during the last half century has, in spite of its seeming successes, been in large measure characterized by poor organization, ill-defined, confused, and unscientific aims, and ignorance, sometimes willful, of the general quality of its output. It has thrived on the credulity of a public deprived of opportunities for thorough and intelligent vocational education and tempted by the allurements of modern business enterprise.

The present is obviously a period of rapid transition in secondary commercial education. Partly under the influence of the general movement for vocational education during recent years, the aims and methods of commercial education are in process of becoming more clearly defined. An increasing number of educators recognize that any form of commercial education which rests largely upon abstract processes, as so often found in high schools now, must in the long run prove wasteful and ineffective. More attention is being paid to training in skill in the various divisions of commercial occupations that are being defined. Systematic comparison of various methods of teaching is being made, with a view to ascertaining which offers greatest economy and effectiveness.

It will be found that there are many commercial occupations which are not yet definitely analyzed, but for which, when analyzed and defined, systematic training can be given. The beginnings of this movement we find now in the interest developing in the direction of training for salesmanship, for office administration, for field salesmanship, for advertising, and the like.

Very probably commercial education in the future will make extensive use of so-called "part-time training," by means of which, after a brief introductory period, the novice will spend part of his time in the lower stages of the commercial occupations and the remaining part in schools, seeking systematically to correlate the practical experience gained in the commercial pursuit with the technical knowledge and training which the school is able to impart.

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## ENTRANCE REQUIREMENTS TO COLLEGES OF COMMERCE.<sup>1</sup>

By DAVID KINLEY.

The principles which control and which, on the whole, should be observed in framing a curriculum preparatory to a college commercial course are these: The subjects of study should afford adequate mental training; they should have proper relation to the civilization, form of government, and opinion of the community; they should stimulate the interest of the students; they should, to a proper extent, have a vocational relation to the subsequent course of study; the subjects should be susceptible of good teaching, and a supply of capable teachers must be at hand.

Not every subject that should be in the curriculum meets all the above tests in the same degree, but every subject should meet one or more of them as fully as possible, and, to a certain extent, should meet all of the others. The general subjects which do so are the languages, mathematics, science, history, economics, and civics. The vocational subjects which meet these tests most fully are bookkeeping, business law, and commercial geography. For a college course in commerce, stenography and typewriting are not educationally necessary,

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<sup>1</sup> Author's abstract.



although useful, for the reason that those who take college or university courses in commerce are preparing themselves not for clerical, but for managerial positions. The educational value of commercial arithmetic is so doubtful and its scope so unsettled as to make its inclusion doubtful.

Practice in the United States conforms pretty closely to the above theories. Taking the Universities of Illinois, Wisconsin, California, and Pennsylvania as fairly representative of the institutions which have undergraduate collegiate courses in commerce, we find that their entrance requirements agree substantially with one another, and also in placing the emphasis as above indicated. All accept approximately from one to four units, or years' work, of high-school grade for admission to their courses. The other units, or most of the high-school work, are in general subjects.

The prospect is that the college commercial course will become more intensely vocational and technical. We must look, therefore, for an increase in the amount of vocational study in the high schools preparatory thereto. Probably the next subjects to be recognized in the high-school course for this purpose will be business organization and practice, salesmanship, and advertising. But while the next few years will see more highly specialized high-school courses preparatory to college and technical courses, there is little probability that these subjects will ever become the main part of the program of the high-school boy. He will still be obliged to have his mother tongue, his history, his science, and, for reasons aside from its obvious utility, his foreign language.

Dean Kinley's paper was discussed by W. F. Gephart, professor of economics, Washington University. The author's abstract of this paper follows:

The demand for formal training for business is due, first, to the wonderful economic development of the United States, with its accompanying complexities in modern business organization and conduct; second, to the rapid development of interest in foreign markets; third, to the splendid results achieved in devising formal training for technical and professional ends.

The particular subjects admitted for entrance credit should not be decided by an attempt to evaluate an assumed worth of a particular subject of study in secondary schools. Any institution which desires to organize a college of commerce should recognize that there are certain well-defined differences in business activity. The chief courses of separate training are for foreign business, domestic business, with its important subdivisions, for technical business positions, such as accountants, and for teachers of business subjects. Thus, with a difference in ends to be achieved, the value of a subject of study in the secondary schools will be determined. The entrance requirements will have a very limited number of required subjects and a large number of electives, depending upon what line of business the applicant expects to enter. Modern language will be required of those who expect to enter the foreign-trade business. A larger amount of subjects called vocational, such as bookkeeping, may be accepted from those who expect to enter accountancy.

Since in many lines of business the facts have not been, and can not for some time be, correlated and scientifically treated in a deductive manner, subjects in the high school which have a large measure of mental discipline should be emphasized.

*SIXTH SESSION.*

The sixth session of the subsection on commercial education was held Monday morning, January 3, at 9.30 o'clock, in the Pan American Union Building. Mr. Albert A. Snowden presided. The teaching of certain fundamental and special subjects of the collegiate business training curriculum was discussed in brief papers by specialists in those subjects. Abstracts prepared by the writers of these papers follow.

**LANGUAGES.**

By GLEN LEVIN SWIGGETT.

The teaching of modern languages is perhaps the most unsatisfactory of all subjects in the course of commercial education. This is due to a lack of texts prepared with this kind of instruction in view and to the prevailing method of classroom instruction in these subjects. Foreign-language study in the schools and colleges of the United States has been largely for the purpose of discipline in the earlier school years and culture in the later. This attitude persists in the face of the well-recognized and insistent demand on the part of business men and high Government officials that the modern commercial languages be so taught that students engaging in foreign service, consular and commercial, be given the ability to speak one or more of these languages.

It is difficult to give this ability to students in our schools and colleges as constituted and controlled. Faculty direction of courses of study, the attitude of the teachers of modern languages, and the method of class assignment of students are strong factors still within the school that act in opposition to the growing demand for a more satisfactory and practical plan and method of teaching modern languages. The latter can only be achieved through a larger spirit of cooperation within the faculty, the growth of an interdepartmental esprit de corps, prompted by a larger sense of public service, the emphasis upon a speaking knowledge of the language in the appointment of teachers, and through a larger freedom within the departments of modern languages that will permit either the dropping of students from these courses, after it is plainly shown that they have neither interest nor ability to pursue a course carried on by the conversational method, or their reassignment to special courses carried on by the traditional method.

The number of texts that place value upon the practical teaching of modern languages is steadily increasing. Teachers' courses in these languages are placing an increasing emphasis upon the ability to speak as a necessary requirement in the study of a modern language. Methods have greatly improved. There is still lacking, however, suitable texts prepared to give through content the essential knowledge of foreign countries and prepared by a method that is both interesting and progressive through a period of study of several years. This lack of suitable texts, together with the inability on the part of the teacher to condition a student's opportunity to pursue a modern language by the latter's native ability to take it, are a serious menace and present insurmountable obstacles for the present, except in a few favored institutions, in the teaching of modern languages for commercial purposes.

The study of Latin should precede, if possible, that of the modern languages. To do this the two elementary years of Latin should be placed in the grammar-school period. Sound pedagogy and precedent argue for this. The study of



modern languages in the high school and in the college, on the basis of election and permission, can then proceed naturally and effectively and the real aim and purpose in the study of all living languages achieved; e. g., the ability to speak them.

## GEOGRAPHY.

By J. PAUL GOODE.

Of all the subjects in the school curriculum, geography has, next to language, the largest possibilities for service in the way of a liberal education for business. The phase of geography which is being developed in this service takes its point of view from both physiography and economics, and attempts to find the physical or geographic influences underlying industry and commerce. It is a fascinating field for both teacher and student. Though its principles may be firmly rooted in the nature of things, its data are in continual flux with the everyday changes in market conditions and international relations. For these reasons it is not an easy subject to prepare in or to teach. But the reward of such a study is found in the exhilaration of a constantly widening horizon and of migration out of a provincial frame of mind.

The subject as thus conceived lends itself very readily to a year's profitable work as a general course in the later years of high school or to trade schools and first-year college work. The interest thus roused and taste acquired lead naturally to the more specialized courses in industry and commerce now being developed in colleges and schools of commerce. A brief synopsis of the ground covered here follows:

### I. The geographic influences underlying industry:

Position on the earth, as determining climate, area, and form of the lands under study.

Land relief-barriers of mountain or dissected land.

Passes and valley routes through highland barriers.

Plains and their influence.

Mineral resources: Character, areal distribution, accessibility.

Climate as an influence on life.

Plant life, wild and cultivated, as a basis of commerce.

Human life and development, especially as to stage of development, education and training, population density, government participation in industry and commerce.

### II. The chief commodities of commerce: A general view.

Products of the farm, orchard, and range—The cereals, sugar, fruits, vegetables, beverages, drugs, animal products.

Products of hunting and fishing—Furs and fish.

Products of the forest—Lumber, rubber and other gums, cork, dyes, etc.

Products of mines, quarries, and wells—The mineral fuels, iron and other common metals, the precious metals and stones, building stones, cement, clay products, etc.

Power as a commodity.

### III. The geographic influences in commerce.

Advantage of position with reference to trade.

Winds and currents and the great ocean routes.

The organization of ocean commerce.

The development of land routes of trade.

The development of market foci.

#### IV. Commercial countries and their commerce.

Selected important countries studied as to commercial development and possibilities.

The growth of world trade and the part played by leading lands.

The last two sections as outlined above may well be developed as advanced collegiate work, and even a single country may profitably occupy the time of a college course. The work thus developed opens up almost numberless avenues of special research of university grade. In high-school work a textbook is used, almost of necessity. But even here much reading may profitably be done on library references, especially in periodical literature as in the recent official publications by various Governments.

No subject offers a better opportunity for education by way of the eye, since photographs, stereographs, and lantern slides, or, better still, motion pictures, bring vividly before the student the foreign lands and strange peoples at work on the production of commodities, or the transportation of these wares along the highways of world trade. Fortunate, too, are those schools in the great commercial centers, where access is easy to commercial museums; or better still, where the great industries may be visited, and the actual work be observed in the handling and transforming of the raw products into the finished wares of commerce. Then, too, the subject calls for a large and constant use of maps. The ingenuity of teacher and student will also be well repaid by the conversion of statistics into graphs, which bring vividly before the eye the trend of commerce and the growth of nations.

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### HISTORY.

By WILLIAM R. SHEPHERD.

Too often is history conceived and written, taught and studied, with the idea that it is an adjunct of belles-lettres and mathematics. But the new concept of history as a record of the totality of human endeavor, as the story of the growth of mankind broadly considered, is giving to the knowledge of the past an organic vigor, a live practical utility, a genuine power of application to the problems of to-day, which differ more commonly in degree than they do in kind from those of yesterday.

In habitual conversation the world over, men and women have talked and continue to talk about business, politics, and the weather, domestic relations, children, and servants, to the utter exclusion of what is ordinarily supposed to constitute material for history. These men and women were and are living creatures, not animated books; their habitat was and is the bright and busy earth at large and not the dark and motionless shelving of a library. What they have done and thought are the things in general that interested them then, interest them now, and will continue to interest them until the end of time. Such things are the veritable stuff out of which history as a living record of human conduct is made.

History, as the word goes and as the child finds it, is only too apt to be dull, and hence profitless for the youthful if not also for the adult mind. Yet it can be made interesting, and hence valuable, simply by humanizing it.

What people to-day really care to know about their predecessors on this planet is what the latter did in the ordinary affairs of life; just how, in fact, they lived and moved and had their being. Obviously, then, studies aimed at affording a practical familiarity with the methods of gaining a livelihood in the realm

of business should include the story of what our ancestors have accomplished in the same realm, pointing out the respects in which they failed and in which they succeeded, and why. The manifold relationships in the actual dealings of people with one another, in their application of the treasures of earth to human welfare, these are the themes on which emphasis should be laid. How our forbears procured the wherewithal to eat and wear and shelter themselves, how such things were produced, exchanged, and consumed; how our parents through the ages contrived to fashion themselves into an ordered society, and how they cooperated to render this world a better place in which to dwell, are questions rising in the youthful mind which call for an adequate answer.

Politics and war, the topics that hitherto have crammed the pages of "history," and commonly made them as dead as the personages of whom they treated, should be relegated to the few who have the leisure and the inclination to learn about them. What the teacher in the modern school of commerce has to present is social history, in the broad acceptation of the term. This will embrace a record of doings in the fields of industry, trade, and transportation not only, but in those of the evolution of groups and classes in the community, their characteristics and relationships, their thoughts, and their deeds, as affecting the development of mankind, quite apart from the spectacular achievements of the soldier and the lawgiver.

The scarcity of available textbooks on organic history of the sort need not daunt the teacher who realizes the value of it. If he will search through the conventional works, he will find many a chapter, many a paragraph, and even a sentence to serve his purpose; for even the mere narrator of wars and politics could not avoid altogether the less spectacular or extraordinary, and hence the more human, and the more interesting, in his record. Diligently to seek them out, and to set them forth means the study of a genuine history that "teaches," and does "repeat itself."

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## GOVERNMENT.

By JESSE S. REEVES.

In this paper consideration is given to conditions in the colleges and universities of the United States only.

1. Prerequisites, not only for the study of government, but also for general preparation in foreign commerce:

(a) Familiarity with foreign languages and literatures. The deficiency noted is that instruction in the modern languages is too often delayed until after entrance into college.

(b) A knowledge of geography. The ignorance of college students in this field is notorious. It is a burden upon the college instructor in the fields of history, economics, and political science, as well as in higher commercial education in the narrower sense.

(c) College training in history and economics to the extent of at least one year's course in each.

2. Training in government is admitted to be of less direct vocational value in the field of higher commercial education than is training in economics, finance, and transportation.

3. The courses suggested:

(a) An elementary course in government which should cover the field of American political institutions, but it is suggested that there should be included

within such a course a treatment of the governments of other countries, European and American, in order to obtain a less provincial point of view and a broader horizon.

(b) Commercial law, which should be based not upon the English common law, but upon the legal ideas common to all civilized countries.

(c) Private international law, in order that the fundamental differences in the great legal systems of the world may be appreciated.

(d) Public international law, in order that the student of international commerce may become familiar with the greater legal conceptions which bind states together, and so develop broader sympathies and a conception of the international mind.

Finally, while these studies are primarily cultural, it is suggested that they may ultimately be of the highest vocational value.

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## MATHEMATICS.

By EVERETT W. LORD.

Between the colleges and the business world there has been a gulf which sometimes has seemed impassable. Not a few eminent men of affairs have maintained that the college course tended rather to unfit a young man for business than to aid his advancement. At the same time, the average college professor has considered the world of commerce wholly apart from his sphere and has disdained any connection with business men other than that sometimes necessary when the latter were allowed to contribute toward an educational endowment. In spite of this feeling, an increasingly large number of college men in the past few years have gone into business. These men have insisted that the colleges should recognize the importance of business as a profession, and that business men should acknowledge the possibility of learning something from college courses. One after another, leading educational institutions have offered courses in business or have even established departments of business administration or commerce. The teaching of mathematics has formed but a small part of these business courses. There seemed to be no particular connection between higher mathematics, trigonometry, calculus, or even higher algebra, and the routine mathematical transactions of buying and selling. A study of the catalogues of the various schools of commerce and business administration shows that few of them have included college mathematics in their course. As a rule, these colleges have limited their teaching to higher accountancy, to statistics, and phases of mathematics included in marketing and economic courses. The study of banking and foreign exchange has involved some mathematics, although little more than phases of commercial arithmetic, and the study of insurance has brought in a specialized type of mathematical work—the theory of probabilities and actuarial mathematics.

The school with which I am most intimately familiar, the college of business administration of Boston University, includes in its complete course, leading to the degree in business administration, not only the mathematics of accounting, but applications of algebra and geometry, a study of logarithms, and, in one of its divisions, the same work in solid geometry and trigonometry that is required of freshmen in a course in liberal arts. The applications of algebra and geometry are found to be of direct help to the young business man, while the training in solid geometry and trigonometry is warranted as the stimulant to scientific observation and accurate record—two things of the utmost importance

to the business man. When making up the course of this college, the writer conferred with many business men, including bankers and merchants in various lines, asking them for their opinion on the subjects to be required of the college student who aspired to excel in business. In no case did one of these business men suggest the higher mathematics; indeed, several of them were inclined to believe that any mathematical study beyond that needed for work in accounting was little more than a superfluity. College men, when consulted about the same matter, varied in their opinions largely according to their individual tastes for or against mathematics. In spite of the unanimity of opposition or of indifference shown by active business men in the teaching of mathematics, we have found that the modicum of mathematical training included in our course gives good results. We shall not extend the requirements to include any other of the traditional college mathematics, but we shall continue to allow our students to elect higher mathematical subjects as part of their general course, and we shall encourage such elections when students show marked mathematical ability.

## BANKING AND FINANCE.

By CHARLES LEE RAPER.

The fact that in many countries the great majority of trades are made on the basis of credit, that much of the productive work rests upon credit, should easily convince us of the vital importance of banking and credit. To make a course on banking and finance vital, the important steps and instruments in the process of banking practice, as well as the chief factors in commerce and industry, must receive large consideration. The study should make clear and real the functions and workings of the bank, the chief credit institution which we have, as it accumulates its resources—capital, surplus, deposits, and credit—and as it makes loans of these resources to the active producers of commodities. The part which bank reserves play in banking practice and in credit and business stability should be intelligently grasped by the students. How large they should be for the sake of the safety of the bank and of its depositors and note holders, and where they should be mobilized for use when the call comes for them, are fundamental questions which bankers have to answer; and the answers should always be in terms of the actual business and political conditions.

The work performed by the various types of banks should be known. Special effort should be made to obtain a clear understanding of the work and the results of centralized banking and of the decentralized system. The weakness of the completely decentralized system which has prevailed in the United States should constantly be contrasted with the strong points of the most effective European banks. To discover how much of governmental regulation and what its form should be to make the banking practice sufficiently safe and stable, at the same time allowing the managers to perform their work with elasticity, according to business and financial conditions, is one of the precious discoveries of a country. Because the bank should always be prepared to meet the obligations which it owes to its depositors and note holders, and because it should always accommodate business with the maximum loan of its resources, the problem of converting its assets into cash when it most needs it is highly important. One solution of such a problem is to be found in the investment of a considerable part of its resources in the most salable forms of loans.

Three more or less distinct fields are open for the investment of bank credit: (1) Local; (2) national; (3) international. The banking system of a country

should perform services in all of these fields; it must do so before it can render the most complete service. And banking in the international field, as well as in the national and local, stimulates the broadest possible intercourse and confidence and promotes solidarity of business. The student should know the function and the working of the more important instruments of bank credit and finance—the check, bank draft, documentary bill of exchange, commercial bill, finance bill, etc.

To understand the money market and rate is no easy task, but the student must have a firm grasp of these before he can hope to know banking and finance. The money market and rate may at times be largely controlled by Government finance, as is evidenced now in many of the European countries. Ordinarily private finance—the discounting of commercial and industrial paper or lending on promissory notes secured by stock-exchange securities—plays the larger part in the control of the money market and rate. The money market and rate may be local, national, or international, and their scope exercises a large influence upon banking and finance. No one can make the most effective study of banking and finance without an intimate knowledge of the whole field of business, of the making of the raw materials and their finished goods, as well as their exchange. Banking and finance are fundamentally attached to the forces of the production, distribution, and consumption of commodities.

Textbooks should be used as the general guide, but they must be supplemented by much reading in general economics and government. To make the course closely connected with the real currents of life, the daily newspapers and the weekly bank statements, such as are issued by the New York Clearing House and by the Federal Reserve Board, must be read. By a combination of texts, readings, and his own enthusiastic interest, the teacher may bring to the minds of the students the leading principles of banking and finance and the more important facts of the operation of these principles in everyday business life. The task is a large one, but it will pay a large percentage on the investment.

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## STATISTICS.

By E. DANA DUBAND.

This paper has reference to the teaching of statistics in institutions of collegiate or university rank which aim to prepare students for a business career. The enormous part played by statistics in modern industrial and commercial life shows their importance in the curriculum. Many of the courses ordinarily offered in schools for business training include statistical information as part of their subject matter; for example, courses in commercial and industrial geography, corporation problems, transportation, money and banking, and the like. Students in such courses should be made familiar by actual use with the more important sources of statistical information and taught the critical use of the data.

There is need, however, for specialized courses dealing with the statistical method. Practically all students preparing for business might well be given at least one such course, as in after life they will often need to use statistical material and should be able to grasp it readily, interpret it clearly, and present it effectively to others. There is also increasing demand both in public and private employment for expert statisticians, and advanced statistical courses should be offered for those who aim to become such.



It is not necessary that statistical courses in the majority of institutions should enter into very advanced mathematical regions. Instruction in the higher statistical mathematics may be confined to a few institutions. On the other hand, a school of business training should not aim to turn out skilled statistical clerks. Practice in the simpler mathematical and graphical processes should be chiefly incidental to practice in the application of analytical methods.

The most important desideratum in statistical work is accuracy in the original data, and much place should be given to instruction in methods of preparing schedules of inquiries and instructions for filling them, and in methods of collecting data in the field. Practical experience is essential in connection with such instruction, as in fact in connection with all parts of a statistical course. Instruction in methods of compilation should lay stress upon the close connection between the methods applicable to a given set of data and the final methods of presentation and analysis to which it is intended to subject the results. Stress should be laid upon form of tabular and graphical presentation, as well as upon analysis. Much of the value of statistics is lost because people can not understand them. Absolute clearness of form and proper perspective are essential. Finally, courses in statistics should obviously train the student to apply adequate methods of mathematical and graphic analysis. Much of published statistics is only raw material, from which lessons of great value might be drawn by trained men.

In every course in statistical method students should be given abundant practice work. There should be a well-equipped laboratory. Much instruction by lecture or textbook will leave the student incapable of actually doing successful statistical work in his later career.

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Papers on the teaching of the very important subject of accounting were presented from the standpoint of the teacher and the practicing public accountant. The following is an abstract of the paper by Prof. Grass, of Leland Stanford Junior University:

### THE TEACHING OF ACCOUNTING.

By DONALD F. GRASS.

Collegiate instruction in business subjects is a late development in the United States, due to overcrowded curricula and inertia in the educational field. Growth in size of business unit is the most important factor in the increased study of business. Combination, large-scale production, and in some cases, monopoly, bring problems demanding greater efficiency and men of greater mental and moral grasp. These problems awaken people to the greater need of accountability of business men. Government activities in the field of business call for highly and broadly trained men. Peculiarly so in a democracy, as they must be intelligently responsive to the people's will.

Political questions like railroad rates, tariff rates, and questions of monopoly price call for accounting knowledge in the equipment of the statesmen who would handle them intelligently. The response to call for collegiate instruction in business is heartily met when need becomes clear. To-day there is scarcely an institution of higher rank that does not give instruction in accounting and allied subjects.

Accounting should be considered from the collegiate point of view. This is due to the fact that business activities are economic activities. The real work

of the accountant is the tracing of values through all their mutations in the business world. Principles of valuation are economic principles. All the economic forces at work upon these business values must be understood by the accountant. Their intricate play must be made a matter of accurate record just as they occur. The fundamental studies of the accountant should be the principles of economic theory and the social organization of the forces of production in each business unit. Legal knowledge is also necessary to a comprehension of the business and its transactions in relation to the rest of the social organization. Law is the expression of human experience in adjusting equitably these relationships.

Last and least in importance from the standpoint of university study is the technical material of accounting. Technical means and method in the handling of accounting are infinite in variety and vary with growth and development. Study of all important technical devices is necessary, but is incidental to the study of accounting principles and problems. The aim is to give knowledge of underlying principles, and capacity to meet comprehensively a new problem.

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A résumé of Mr. Geijsbeek's paper follows. Mr. Geijsbeek was for four years chairman of the committee on education of the American Association of Public Accountants, which has made a very careful and continuous study of this question since 1911.

### ACCOUNTING.

By JOHN B. GEIJSBEEK.

1. *What kind of accounting is meant.*—The accounting here treated is the work of the expert accountant, who aids materially in the management of business by furnishing financial statement and data, after the work of the entry clerk is complete.

2. *The education of a person desiring to become an accountant.*—The accountant should receive just as ample an education as the manager. This is to enable him to execute his duties with the greatest sureness and effectiveness. His education must be accomplished in a very much shorter time and through altogether different routes from that of experience.

3. *The necessity for such an education.*—The public and high schools furnish no education of help to the accountant, as the commercial courses in these schools only give good instruction in typewriting and bookkeeping, in which he is not interested. Very little knowledge is obtained in the lower schools that is of real value to the student, and it is the author's opinion that the curricula of American schools should be greatly changed, so as to really furnish a practical instruction. The necessity for commercial education is more important than ever on account of the present war, which will affect the American trade by greatly increasing it.

4. *It should be a college education.*—As the accountant must be able to cope with the mature mind of the management of the firm, it is necessary for him to have a mature education, and this can only be received in a college.

5. *The methods of teaching the subject.*—The greatest difficulty is to make the courses as practical as they will be found in actual business. The author suggests a method similar to the clinic service of the doctor. He suggests letting the student work under guidance on the books of charitable institutions and



small business concerns. The progress would be much greater and the knowledge obtained more profound.

6. *The qualifications of the student.*—Before beginning the study of accounting, the student should possess a thorough general education which will enable him to understand the use of technical terms and fully grasp the instruction offered him. He should have a good foundation in commercial history, commercial geography, commercial law, commercial economics, and like subjects; and, above all, he should be master of the language he is to use and have a good knowledge of other foreign tongues. It is thus easily seen that accounting can not be fruitfully taught before the third year of a collegiate education.

7. *The postgraduate course seems better.*—The postgraduate course seems more adequate to prepare a man for this work, as only a graduate possesses that knowledge of the world so lacking in the college man. As business ability consists chiefly in grappling seriously with the daily problems, it is necessary that the training in directing ability should only be given to graduates and not to undergraduates. The author does not mean by this that instruction should only be given to the college graduate, but desires rather that the course be one of college education for business men than of business education for college men, and concludes by regretting the formalities required of business men who seek to enter colleges after having acquired sound experience in the world of business and practical affairs.

The subdivisions of the courses in accounting are very numerous, but in general may be enumerated as follows: Philosophy of accounts; practical accounting; accounting procedure; accounting systems; simple accounting problems; advanced accounting problems; auditing; advanced auditing; private auditing; accountants' reports; corporation finance; accountancy of investments; and cost accounting.

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## BUSINESS LAW.

By WARD W. PIERSON.

An investigation recently completed by the business law department of the Wharton School of Finance and Commerce of the University of Pennsylvania brought to light interesting data concerning the teaching of business law in the colleges and universities of the United States. The following is the distribution of educational institutions reporting: Universities, 86; colleges, 149; technical schools, 14; agricultural schools, 8; total, 257.

Ninety-eight of the above institutions offer courses in business law. Taking these numbers as a basis of computation, we find that over 38 per cent, or a little more than one out of every three institutions of higher education in the United States, offer business law as a regular study.

Of the 86 universities reporting, 20 have a separate commercial course of which business law is an integral part; 20 others offer it as a subject under their general curriculum, while 46 universities as yet give no instruction whatsoever in the subject. Of the 149 colleges reporting, 12 have a distinct commercial course, including business law, 31 offer it under the general curriculum, while the remaining 106 do not offer business law in any form. Business law forms an important study in technical and agricultural schools. Reports from 14 engineering schools show that 13 offer courses in agency and contracts, and these courses are required for a degree. Out of 8 agricultural schools reporting, 3 require it before graduation. As to time given over to teaching of business law, only 2 institutions offer courses covering four full

years, these being the University of Pennsylvania and New York University. Four others offer 3 one-year courses, 10 offer two-year courses, and 25 have one-year courses, while 44 offer business law in the form of a short course of one term or less.

In engineering schools the subjects of contracts and agency are emphasized, while in universities the course is broader and the study more detailed. The subject in the latter includes contracts, negotiable instruments, agency, partnerships, corporations, bailments, sales, personal property, crimes, decedent's estates, bankruptcy, suretyship, guaranty, and evidence.

Fifty-two institutions require the subject of business law before graduation, while 46 carry it as a free elective. Thirty-seven institutions reported that they used the combination method, including a study of court decisions, class discussions, and the lecture system. Seventeen used lectures and quizzes, 5 used simply a textbook, supplemented by lectures; while 4 reported courses given through medium of lectures alone. The remaining number offer combination of various forms too detailed and numerous to mention. Forty-three institutions reported that the subject was taught by practicing attorneys. Three reported that, though not practitioners, the instructors were law-school graduates. In 52 schools it is given by instructors holding merely a college degree.

The subject of business law was first introduced in the United States 44 years ago. However, only 13 institutions have taught it more than 30 years. Twenty-five have taught it between 10 and 20 years, while during the last 10 years, 49 have introduced courses in the subject. This proves that the number of institutions where business law is taught has increased in the last 20 years sevenfold, and in the last 10 years it has doubled. Out of 257 institutions reporting, 159 offer no instruction in the subject. Of these, however, 16 are contemplating the introduction of such a course within the next two years. Against this number there are but 8 which at one time taught the subject, but have dropped it.

The investigation proves beyond doubt the growing importance of business law as a college subject. A knowledge of the legal status of corporations, the forms and functions of negotiable instruments, and the laws in regard to property fill a need in the lives of thousands of people engaged in business or professional pursuits. There is probably no other subject which fills so wide a gap in the college curriculum, which has sprung into existence in so short a time, and which gives greater promise of genuine service to the world at large, than does the teaching of the subject of business law.

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## BUSINESS ETHICS AND PSYCHOLOGY.

By JAMES E. LOUGH.

Until recently business organizations and business operations were frequently regarded as existing and functioning under conditions entirely peculiar to each individual case. We now realize that business is a science and that it is founded on certain general principles. These principles apply to all business operations and include among other topics business ethics and business psychology. Business ethics must not be confused with business etiquette, or with the conventions of business. Business ethics deals with the principles of morality governing business operations and with the duties and obligations of business organizations to other organizations, competitors, employees, investors, and the public. The same principles of conduct that govern the action of the individual apply equally to the activities of business. The obligations

of honesty, uprightness, truthfulness, etc., must be recognized by the corporation as well as by the individuals constituting the corporation.

The aim of a course in business ethics, therefore, will be to teach students to apply the general principles of ethics to business operations. The course should include:

1. The consideration of the evolution of morality.
2. The causes which have produced morality.
3. The necessity of morality.
4. A study of the virtues and duties with special reference to business.
5. Following the discussion of the more formal topics of ethics, consideration should be given to the practical development of ethics as shown in the interest of the larger corporations in welfare work among the employees, the organization of cooperative clubs, vacation clubs, etc.; the general tendency on the part of large corporations to look on the employee as a human being rather than as a mechanism.

The method of instruction is a matter of the greatest consequence. It is most important that the instructor himself should be a man thoroughly familiar with business conditions and who also holds the highest reputation for business integrity. The course must be inductive in nature, must avoid academic discussion and formal definitions, and rich in illustrative material drawn from business.

The general course in business psychology must first of all present in systematic order the essential facts of psychology so far as these apply to business operations. For example, attention, apperception, sensory elements, types of imagination, judgment and reason, emotions and will. This should be followed by a study of the individual, his natural and acquired capacities, and other traits that constitute the elements of his personality.

The following traits should be included in the general course: (1) Physique; (2) knowledge; (3) mental ability, as distinguished from knowledge; (4) disposition; (5) the will; (6) trait chart.

Following this the course should present practical suggestions and exercises for increasing the strength of undeveloped traits. If time permits, some of the more exact methods of psychological measurement may be introduced in connection with the trait chart, or this subject may be treated in a more advanced course. The psychology of salesmanship, the psychology of advertising, etc., constitute special developments of the psychology of business and should be given only a very general treatment in the introductory course.

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## BUSINESS ORGANIZATION AND ADMINISTRATION.

By ARTHUR E. SWANSON.

A survey of the courses now being offered in 34 universities and colleges under the head of business organization, management, or administration indicates that there is little uniformity in the subject matter taught in these courses. This is to be explained principally by the newness of the subject, since most of the courses have made their appearance within the last five years.

The study of business organization and administration means a study of business enterprises, their structure, methods, and policies, with particular attention to the ascertainment of the principles underlying and determining successful business organization and administration, and an additional study of the observed facts and principles of other fields of knowledge as they bear on this

subject. These peripheral fields include especially economics, psychology, sociology, and accounting. Too much emphasis has been placed on the study of organization and administration of ownership in courses in business organization and administration. This is especially true if it can be assumed that students have taken courses in business law and corporation finance.

In the study of operative organization and administration a course in fundamentals should precede and serve as an introduction to the applied courses. The fundamentals to which I have reference appear to me to be as follows: (a) The functions of organization and administration; (b) the limitations; (c) the dependence of organization and administration on the purposes of a business; (d) the delegation of authority; (e) the fixing of duties and responsibility; (f) the conditions necessary to administrative control; (g) the specialization functionally or divisionally of authority and administrative direction, and of the work to be performed; (h) the standardization of materials, methods, and policies; (i) the assembling, classification, dissemination, and recording of information; (j) the personal correlation of men and departments, and the mechanical correlation of materials and equipment; (k) discipline; (l) incentives, including all forms of compensation and other inducements; (m) employment and discharge.

Following this elementary study, strictly applied courses should be given in production and distribution in which a presentation can be made of specific problems of organization and administration in the light of the fundamentals. In the field of production a course in factory organization and administration can well be supplemented with specialized courses in such subjects as motion study, efficiency standards as applied to production and production costs. In the field of distribution a course in merchandising or marketing can be supplemented with specialized courses in foreign trade, advertising, sales organization and management, credits and collections.

Theoretically, the value of special training in business organization and management can be supported on the basis that there are ascertainable facts in this field which can be classified and studied. This process is essentially educational. Supporting this assumption, experience proves clearly that business organizers and managers find courses in business organization and administration very valuable.

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### SEVENTH SESSION.

The seventh session was held in the Pan American Union Building January 3, at 2.30 o'clock. Mr. Albert J. Snowden presided. The subsection on commercial education was most highly honored on this occasion with an address by the Hon. William Jennings Bryan, to whom an invitation was extended to address the Second Pan American Scientific Congress, the plan and purpose of which he had indorsed and encouraged cordially and constantly during his tenure of the portfolio of State. Electing to speak in a general way to the establishment of relations through educational preparedness, the address of Mr. Bryan was assigned to this subsection as such time as he could conveniently attend it. Space does not permit printing Mr. Bryan's remarks in full in this brief report; the importance and sig-

nificance of which may be readily seen in the following quoted paragraphs:

**ADDRESS OF HON. WILLIAM JENNINGS BRYAN.**

In casting about for a theme for my brief remarks to-day, it occurred to me that the word "cooperation" might well serve as the point about which to group certain suggestions for which I ask your consideration. Cooperation is the growing word of the twentieth century. There is noticeable everywhere an increasing tendency on the part of individuals and nations to get together in matters of mutual concern. In the business of life the idea is accentuated by the multiplicity of corporate organizations in which individuals associate themselves for the advancement of joint interests. Nations, too, are more and more considering matters of common interest and learning to give each other the assistance which comes from joint action. While the unprecedented struggle now raging across the Atlantic has, for the time being, interrupted cooperation in that section of the world, it should be regarded as a temporary suspension of cooperation rather than a permanent surrender of an ideal. Cooperation in the Western Hemisphere has been more general because of the greater similarity of institutions and political aims. The present conflict in Europe has tended to draw the Republics of the Western Hemisphere nearer together, as their dependence upon and power to aid each other have become more apparent.

With this introduction, permit me to suggest a few lines of action along which I believe it is possible to cooperate to a larger extent than we do now. First, the language tie which binds nations together is a strong one. The ability to speak and understand each other lies at the foundation of both business and social intercourse. The two languages spoken in the Americas are the growing influences of the present century. The rapid increase of the population of the United States would alone greatly influence the English-speaking population of the world during the next century, and in addition to this the use of the English tongue is rapidly spreading in the Orient, in the commercial centers of the world. As the Central and South American countries are likely to repeat during this century the development witnessed in the United States during the past century, the Spanish language seems destined to fill an increasing place in the world's future. The very best encouragement should therefore be given to the teaching of the English language in Latin America and the teaching of Spanish in the United States. There are several ways in which this encouragement can be given. The exchange of professors would be one. If an arrangement could be had by which colleges and universities of Central and South America would accept American instructors in return for Latin-speaking instructors in the United States, the temporary exchange would not only be helpful in extending the two languages, but larger acquaintances would follow, and acquaintance is, after all, the most essential thing in the improvement of international relations, whether social, business, or political. I would turn aside from my manuscript a moment to still further emphasize this idea. It has, ever since my connection with the Pan American Union, been a growing thought with me, that we have not improved to the full the opportunity to increase acquaintance by this interchange of professors and students, and I hope that those who are here assembled will carry back this thought for consideration and development, because whenever a professor comes to us from any of these Republics the students who knew him there will follow him with their thoughts, and where he goes he is apt to establish a center which will draw more and more of these young men to the United



States, and in this country he will become acquainted with students and he will be able to give to them a better knowledge of the country from which he comes than they can get from books. As this acquaintance is increased and as these ties between us multiply, there will be not only commercial and business advantage, but there will be the advantage that comes from more intimate political relations and more friendly diplomatic relations that rest upon this better knowledge of each other. Encouragement also could be given to the study of the two languages by colleges, especially by those located in the southern part of the United States, and in the northern Republics of the Latin-American countries, where special inducements could be offered to foreign students. The United States, for instance, could establish in Porto Rico, Panama, and accessible points along the Gulf Coast, schools in which special attention would be given to the teaching of the Spanish language and Spanish history, and the Latin-speaking nations could in return offer similar inducements to students from the north. In these special schools young men from the United States intending to go to South America, and young men from South America intending to come to the United States, could meet and while preparing themselves for their work, acquire that personal acquaintance which contributes so largely to success. This thought occurred to me first when nearly six years ago I visited Porto Rico, and again when I visited Panama, and I have not from that time failed to think of the opportunity which we have, as a nation, to extend our ideas as represented in our educational systems where they will be seen and taken advantage of by our neighboring Republics.

The establishment of some monetary unit throughout the Western Hemisphere has long been discussed, and there is no doubt that it would greatly facilitate the exchange between countries. The currency law now in force has, by authorizing the establishment of branch banks in foreign lands, greatly aided in the improvement of trade conditions, but it will require some years to realize to the full the advantages made possible by this law. It is worth while to consider whether it would be wise for the American Governments to facilitate exchange by an arrangement under which they could cable each other deposits made with each to cover foreign purchases.

During my connection with the State Department I had an opportunity to learn of the enormous burden thrown on the small Republics of Central and South America by the high interest rates they are compelled to pay. I became convinced that these high interest rates not only worked an injustice to the countries that paid them, and retarded proper development of those countries, but these loans, the very best that could be secured under existing conditions, sometimes caused insurrection and revolution. I learned of one incident in which the Government had to pay 22 per cent interest. I talked with the representative of that Government which was paying what would seem to us a very excessive rate, and found that the men who loaned the money felt justified in charging the higher rate to cover what they called the "risk." I also found that some of these people, after being paid for the risk, then asked the Government to take the risk off their hands and give them the profits without the risk. I came then to the conclusion that it would be much better for our Government to remove the risk and thus remove the burden instead of allowing the risk to be paid for and then removing it for the benefit of the man who loaned the money.

This Congress has already under consideration the possibility of cooperation in the defense of the Western Hemisphere as embodied in the proposition recently submitted by the President through Secretary Lansing, which con-

templates a joint convention providing for the investigation of all diplomatic differences and arbitrary boundary disputes among the Republics of America, a convention which will go far toward removing the possibility of armed conflict between them. This evolution of the Monroe Doctrine enforced by the United States alone into Pan Americanism, supported by Latin America generally, will not only insure a solidarity of sentiment, but will, by the union of strength, lessen the expenditure necessary for protection, in case of a possible attempt of invasion, especially since the danger of invasion has decreased in proportion as the population in Europe has been reduced by the enormous loss of life occasioned by the war.

In conclusion, permit me to express the deep gratification which I feel over the spirit of cooperation and friendship which has made possible the treaties already negotiated between the United States and Latin-speaking republics. The plan, providing for the investigation of disputes of every character, was submitted to all the nations of the world at the same time, but to Latin America fell the honor of first accepting the proposal. The Republic of Salvador signed a treaty of this kind on the 8th of August, 1913. Guatemala, Panama, Honduras, and Nicaragua followed in the order named. It was not until after these five treaties had been concluded with the Latin-American Republics that the first treaty with a European nation was negotiated, namely, that of the Netherlands, signed on the 18th of December following. We now have 30 of these treaties connecting us with nations exercising authority over three-fourths of the peoples of the globe. Nearly all of the Republics of Central and South America are included in the 30, and the plan embodied in these treaties has been followed in a treaty recently entered into between Brazil, Argentina, and Chile. And when could an example set by the western Republics be more timely. While Europe, rent with passion, is in the throes of a struggle more bloody and costly than any the world has known before, peace prevails in the Americas. On the north of us, there is an unfortified boundary line of 3,000 miles, and our Nation has relieved our neighbors on the south of any fears that they may have had of invasion or conquest by us. Nor is our Nation the only one in giving evidence of peaceful intention. On the boundary line between Argentina and Chile there stands an heroic figure, the Christ of the Andes, erected by the joint contributions of the citizens of the two Republics, a proof of present amity and a pledge of future friendship. God grant that all the American Republics, one in their reverence for God and in their worship of His Son, identical in their aspirations, similar in their governmental methods, may, in the spirit of brotherhood and faith, cooperate in the advancement of the material, intellectual, and moral welfare of the western world, honorable rivals in helpfulness and service. They are joint tenants of a new land, neighbors in a new country, and are united by ties of interest as well as by ties of sentiment. What God hath joined together let no man put asunder.

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The character and method of the instruction given in special schools of secondary grade were discussed at this session. Papers on the work of the business college, commercial high school, and the Young Men's Christian Association were presented, respectively, by President C. C. Gaines, Prof. William Fairley, and Mr. Edward L. Wertheim.

## COMMERCIAL HIGH SCHOOL.

By WILLIAM FAIRLEY.

The most striking recent development in our secondary education has been along commercial lines. The reasons for this are twofold: The demand for a practical bread-winning training for that large proportion of our young people who can not go to college, and the demand of business men for young people in their offices who have some training in business operations. The report of the Commissioner of Education for 1913-14 shows the following ratio of commercial pupils to the entire secondary enrollment: North Atlantic Division, 22 per cent; North Central Division, 10 per cent; South Atlantic Division, 8 per cent; South Central Division, 4 per cent; and Western Division, 14 per cent; in New York City for 1914, 29 per cent. These figures show very clearly that commercial education is in demand very nearly in proportion to the business activity of the several sections.

The aim of the private school is largely confined to the lower ranges of commercial work. The public school should have a larger purpose, manifested in the length and the scope of its instruction. It adds to the technical training some preparation for citizenship. Most of our commercial training is in departments of general schools. A few of our larger centers of trade have developed the specialized commercial high school. The latter type has its distinct advantages. There is a lamentable tendency for the department in a general school to attract the weaker students. Even in the special commercial school there is as yet a too general feeling that its courses and standing are inferior to those of the academic school. The remedy for this can be found only in a change of public sentiment which shall arise from the manifested utility and success of commercial courses. The fact that most girls enter commercial courses simply to get a training for clerical duties creates the need for different training for such boys as wish to prepare earnestly for duties of a more advanced nature. The purposes of a commercial high school are: To fit for the simpler clerical duties, to fit the more earnest and capable to grow into managerial and executive positions, and to fit those who wish it to enter the commercial schools of university grade.

The course of study ranges from two to four years. The most common type is a three-year course. The best schools offer a four-year course. And in view of the subject matter undertaken and the aim in view, this is none too long. The full commercial course should embrace far more than the traditional penmanship, arithmetic, spelling, letter writing, bookkeeping, stenography and typewriting. These prepare only for subordinate clerical work. They are essential, most of them, for the majority of students. But they are only a beginning. Remembering, of course, that we are dealing with boys and girls of from 14 to 18 years of age, there is need of such other studies as shall give them as broad an outlook as possible into the world of men and of affairs. An unfortunate distinction is sometimes made in commercial schools between academic and commercial work. With the possible exception of music, there should be no subject in a commercial school which is not regarded as having a bearing on the future life of the business man; no subject which may well be slighted in the student's estimation because it is not practical. There must be some subjects which will have only an indirect bearing on office procedure, but will have a powerful influence on general intelligence and capacity for seizing and solving problems. Moreover, every business man is to be a citizen as well. The things that make for citizenship have their place



as truly in the commercial as in the academic school. As will be shown later, it is this very breadth of training offered by our better commercial schools which the business world is fast learning to value and to demand.

Cooperation of business men and associations, illustrated best in Germany, may be obtained by visits and by helpful criticism of courses and methods, by lectures and addresses, by gifts of specimens and apparatus, and by entering into the "cooperative system"—half time in school and the alternate week in actual business employment. Every commercial school should have as ample a museum of commercial raw materials, products, and processes as possible.

There is one broad, general field which may well be had in mind in secondary work; it is the field of foreign trade. We know, as a matter of fact, that a good many graduates of our commercial schools are being sought now for Latin-American positions. Our schools will do well to have this growing possibility in mind. An English writer has thus stated the preparation for work in foreign fields:

1. An effective knowledge of foreign languages.
2. A knowledge of the modern methods of importing or exporting goods, including freightage and modes of transport.
3. A thorough knowledge of the goods in which he deals and of the sciences bearing on his trade.
4. A knowledge of the markets at home and abroad and the customs of the trade.
5. To understand foreign tariffs, foreign weights, measures, and moneys, and the exchanges.
6. To be acquainted with the technicalities of commercial documents, such as bills of exchange, bills of lading, insurance policies, etc.; and to have some knowledge of commercial law.
7. To know the principles of bookkeeping and accountancy.
8. A knowledge of economics bearing upon commerce, and the use of trade statistics.

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## YOUNG MEN'S CHRISTIAN ASSOCIATION.

By EDWARD L. WERTHEIM.

The Young Men's Christian Association in the United States has for a long time been engaged in the training of men and boys for commercial pursuits. Its membership, as well as its committees, are made up for the most part of business men. The 4,780 secretaries engaged to carry on the various phases of its work are in the main of the business type.

From simply providing reading rooms and libraries in 1851, the educational work has developed through the gradual additions of lectures, practical talks, educational clubs for study and research, classroom instruction introduced in 1860, definite schools for both day and evening students, etc., until it has produced those necessary lines of practical, vocational training demanded to-day for men and boys. This kind of instruction gradually grew out of the needs of the men, because they could not get this training so well in other institutions. So far as is known definite evening educational instruction of a vocational nature began in the Y. M. C. A. There are educational secretaries who give their whole time to the supervision of the work. Last year in the United States there were 78,000 different men in the classes, with 2,512 paid teachers and 4,700 lecturers. The cost of these activities was \$1,045,900, of which \$800,024 was paid by the students in tuition fees, aside from the membership fee of \$214,190 more.

In addition to the ordinary courses fitting for college and university, 130 different subjects were taught, including every phase of commercial training.

There are many other forms of educational activities, such as educational trips, educational moving pictures, clubs, etc.

The association educational work is for men by men; it is given at any place or time in or outside the building to any kind or group of men; the teachers are selected for reasons of special fitness; courses of a practical nature are preferred; classes in English for foreigners are given free; and, as a whole, the work is conducted so as to be as nearly as possible self-sustaining.

Courses are offered as soon as need for them has been observed; for example, exporting was immediately put on at the time when the agitation for the need of knowledge began at the outbreak of the present war. Spanish at the present time is one of the most popular subjects, and Russian is one of the most recent languages to be added. Classes in business and personal efficiency, accounting, advertising, and salesmanship are all very popular at the present time. In a majority of the classes the instruction is individual. Discussions and interchange of ideas are encouraged in the larger groups.

Definite educational work is being done by the association to acquaint men with the business opportunities in Latin America and to encourage friendly relationship. Spanish was taught to about 1,000 different men last year. Exporting has been taught in New York and San Francisco. Many associations have had special lectures dealing with opportunities in Latin America. Clubs have been organized for men to meet in discussion and have conversation in Spanish and Portuguese. Definite plans for work among the 60,000 Latin-American men in New York, who are encouraged to come to the local city associations on arriving in the United States, have been made.

The associations, with a membership of 620,799 in North America, with 759 buildings, its 4,400 employed officers, etc., offer an opportunity for diffusing information about Latin America. From its platform talks may be given on Latin-American topics. Books, magazines, trade journals, Government reports, etc., can be introduced into the association libraries and reading rooms, and in many other ways the present activities may be extended to include Latin America.

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## *EIGHTH SESSION.*

The program of the eighth session, held in the Pan American Union Building, Tuesday morning, January 4, at 9.30 o'clock, was devoted entirely to the instruction given in special schools of college and university grade. Interesting and valuable experiments are being carried on in the colleges of the United States incident to the establishment, as part of their curricula, of courses in business training. Several of the most fruitful of these experiments, as carried on in different types of schools, were explained at this session by the deans of these courses. Synopses of their papers, prepared by the writers, follow:

### **TULANE UNIVERSITY.**

**By MORTON A. ALDRICH.**

When certain representative business men of New Orleans made up their minds that their city should have a college of commerce, they found three groups of people to which they could turn for help. First, there was the city's organi-

zation of business men, the Association of Commerce; secondly, there was Tulane University; and also there were those individual business men who were especially interested in establishing mature training for a business career. The problem with these men was how to mobilize and combine these three forces so as to secure the active and permanent interest of each group.

The business men of New Orleans have come to think of their college of commerce as an essential part of the commercial equipment of the city. They are of the conviction that they can best use the college of commerce when they think of it along with their exchanges, their railroads, and banks. Thus, the happy situation has developed where the business men think of the college as their asset and their responsibility. The business men do not feel that their responsibility to the college ceases with the signing of a check. Their cooperation is of the solid, active, day-by-day kind, and by bringing their constant interests and practical experience to the support of the college they have prevented waste motion and formalism so as to make every stroke tell.

The Association of Commerce provides ample quarters in its own building for the night courses which the college offers for business men and women (in addition to its four-year day course in the college buildings) and for the public Friday night talks of the college. These Friday night talks, under the joint auspices of the college and the Association of Commerce, have developed in our city one strong business forum. These talks are very informal and are always followed by questioning and discussion. As a result of this close relationship between the Association of Commerce and the college, more of the older members of the association, and more of the members of its vigorous young men's department, are enrolled in the business courses. All this gives the college a business atmosphere which is highly stimulating to young men.

Now, as to the support of individuals: One hundred and four of the leading men of the city have organized themselves into a board of guarantors to guarantee the expenses of the college, and they back up their financial support with their active personal interest. This board meets monthly to hear detailed reports of the work of the college and to lay plans for the further expansion of its usefulness. The college has relied for its success on the conviction that the public spirit and foresight of the modern business man make him ready to support any educational work when he can be shown that it is man's size, concrete, and definite.

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## UNIVERSITY OF CINCINNATI.

By FREDERIC C. HICKS.

The working plan of the college of commerce of the University of Cincinnati represents the attempt to realize two main objects: First, to provide facilities for commercial education of a high standard, and second, to make the training fit the actual needs of business.

The university is a municipal institution not merely in the sense of one supported and controlled by the city, but also in the sense of one whose work is related directly to the activities of the city.

The college of commerce is new, largely the outgrowth of evening classes started some 14 years ago by the Cincinnati chapter of the American Institute of Banking. These evening classes were organized into an incorporated college in 1906, but the real beginning of the plan outlined here dates from 1912, when the college became a part of the university. The requirements for admission in the case of those contemplating graduation consist of, first, the regular college-entrance requirements, and second, a two-years' precommercial course

In the college of liberal arts. The two years' precommercial course may consist either of two full years of liberal-arts work or of a combination of liberal-arts work and approved business experience, such business experience being accepted for one-third of the precommercial course. Students who come into the college of commerce with business experience seem to have a better appreciation of the subjects studied in the college. The subjects studied are in the main prescribed. They include economics, economic history, commercial geography, English composition, mathematics, statistics, business psychology, ethics, money and banking, and railroads. For certain of these studies, subject to the approval of the faculty, work in German, French, or Spanish may be substituted in case the student is contemplating a career to which any of these languages is essential. As a rule, it is expected that the precommercial studies will be completed before the student enters the college of commerce. But it sometimes happens that he needs immediately some of the training offered by the college. In such cases permission is given to pursue precommercial and college of commerce work at the same time. The college is not primarily a degree-giving institution. It exists for the purpose of increasing the efficiency of those who contemplate engaging in business or who have already entered upon such a career. To this end its facilities are available to everyone whose training, either in school or in actual business, is such as to enable him to utilize them with profit. Accordingly, provision is made for admitting special students.

The regular course in the college of commerce covers a period of three years, and leads to the degree of bachelor of commerce. The work here consists of two parts carried on simultaneously; the first consisting of studies in the college; the second, of practice in business. The studies of the first year are prescribed; those of the second year are partly prescribed and partly elective; while those of the third year are wholly elective. The class work mentioned constitutes two-thirds of the work required for graduation. The other third consists of business experience and the study of the business in which the student is engaged. In addition to the above the requirements for graduation include the preparation of a satisfactory thesis relating to the business in which the student has been engaged.

A full year's work in the college can scarcely consist of fewer than 10 hours of class sessions a week, or five two-hour periods. If these sessions are so arranged as to require attendance upon classes five evenings in the week, the student whose days are filled with the duties incident to business activities is unable to maintain the standard which is expected of him. To meet this situation, the college provides classes in the late afternoon as well as in the evening, and no student is allowed to include in his schedule more than three evening sessions, each of two hours' duration. To strengthen still further the quality of the student's work, we hope ultimately to be able to require stated periods for supervised study.

The University of Cincinnati organized its commercial work as a separate college in the belief that it could adapt the work better to meet the practical demands upon it. Long experience shows that deviation of interest results whenever the attempt is made to carry on professional work in the college of liberal arts. The subject matter which must constitute the content of commercial education is still in the experimental stage. Larger freedom can be secured in determining this content in a college of separate organization. Further, when so organized, there can be developed among the students themselves better professional spirit. The teaching force of the college consists of three groups: The faculty staff, staff lecturers, and special lecturers. Most of those constituting the second and third divisions are business men. To utilize effectively the services of men of affairs as special lecturers in class work

requires both care in the selection of men and supervision of the subject matter to be presented by them, to the end that it may be given in the proper form and fit the course of which it is a part. It may not be out of place to mention also the fact that we do not accept the services of anyone in connection with regular instruction without paying for it. This is true even in the case of the special lecturers. Though the compensation is relatively small, our experience has been that it serves to give a business tone to the arrangement which greatly increases its usefulness.

To comprehend the principles underlying any vocation, one needs to be in actual contact with those who are daily trying them out. Only in this way can he grasp their significance and appreciate their bearing upon the conduct of affairs. The method we are now employing to secure this combination of theory and practice is to place the class work of the college in the late afternoon and evening, from 5 to 7 and 7.30 to 9.30, so that students may spend the major part of each day in their several business positions. A systematic attempt to enlist the support of employers in this part of our work was begun about a year ago. The results thus far have been most encouraging.

It is sometimes thought that the curriculum of a college of commerce should include studies treating of all the important phases of business. Such is not necessarily the case. However vital an activity may be to business success, it can not be taught until there is something to teach, that is, until the experience in that field has become sufficiently standardized and formulated to supply the requisite subject matter. In the development of our class work, the starting point is business itself. The studies are planned with definite reference to specific vocations, such as the work of the business manager, the salesman, the advertising manager, the credit man, the traffic manager, the general banker, the investment banker, the accountant, etc. An essential part of this phase of our plan is the study of the business in which the student is engaged, to which reference was made in an earlier connection. It is to be carried on under the supervision of the faculty of the college and will involve regular weekly reports and conferences. Specially prepared schedules will guide the student in his investigations. During the first year, attention will be given to the character and organization of the business unit in which the student is employed, and to his relations with it, contractual and other. During the second year the study will cover the character of the industry to which the given business unit belongs, its history and its place in the general field of commerce, both domestic and foreign. The third year will be devoted to special problems that arise in connections with the business.

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## UNIVERSITY OF OREGON.

By HARRY B. MILLER.

This school was organized in September, 1914, with H. B. Miller, a former United States consular officer, as director and seven leading business men of the State as a board of advisers.

The first principle of the organization of the school is that it should promote the welfare of and interest in the industrial and commercial productions and prosperity of Oregon, the scope of the school to include a broad and comprehensive study of world-wide trade and commerce, the world's markets and methods of distribution, and particularly their utilization and adaptation to the resources and demands of the State.



The development of the resources and industries of Oregon demands a world market, and it was decided that the school of commerce should be actively associated with the Chamber of Commerce of Portland and have the assistance of the Federal Government. The school of commerce has been accorded a recognition that gives it benefits derived from these two departments of government.

The department of commercial and industrial service, whose primary function is to be of service to the commercial and industrial interests of the State, has been established. It is to be the collecting point and source of distribution of information regarding the resources of the State, and it is to devise and adopt such methods of investigation and instruction as will best aid in development of these resources. The plan is to select one of the leading industries and formulate a complete list of questions covering the essential features of the industry, answers to which will aid in creating and enlarging its markets. These questions are handed over to the Departments of State and Commerce and forwarded to the consular and commercial representatives in various parts of the world. From replies, bulletins are issued which give the Oregon producers and manufacturers complete and detailed knowledge of the world's production and consumption of the commodities investigated and the possibilities of Oregon in competition with other States and countries. The school of commerce also has the aid of State organizations in the industry under investigation.

There is also a course of lectures by business men and manufacturers and by representatives of the Federal departments who have made investigations of conditions abroad.

The director and his associates are endeavoring to inaugurate a system for the exchange of professors between this institution and some of the South American universities.

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## NEW YORK UNIVERSITY.

By JEREMIAH W. JENKS.

The purpose of the New York University school of commerce, accounts, and finance has been to combine with special courses, intended to widen the intellectual vision and to raise the ideals of the students, such a practical training as would fit young men best for the technical work of a business career. Emphasis is laid upon certain fundamental courses, such as accounting, business English, and a practical use in speaking and letter writing of any foreign language required, with, in addition, collateral subjects such as economics, business finance, principles of education, the relation of Government to business and the like. A large percentage of the students are engaged in active business, so that they pursue these courses largely in the evening, although a day school is maintained. Two years are required for day students, three for night students. The teachers themselves have practically all had business experience. The combination of students actively engaged in business and business trained teachers brings about eager enthusiasm and clear conceptions of the scientific principles upon which business is conducted. A considerable number of the students entering are already college graduates, who are expected to do a higher grade of work. Cooperation with the city of New York is maintained through a number of special courses given to young men in the civil service of the city. In addition, a number of courses are given for the engineering department of the city.

Last year a number of "business fellowships" were established in order to bring the university into closer touch with the best business houses, especially with the idea of securing men of ability to meet the crying demand for material to enter the work of developing the foreign trade of the United States. A number of important business houses have arranged to cooperate with the university by offering to a limited number of college graduates positions enabling these men to combine scientific study of business principles with actual business practice. Among the companies cooperating are the United States Steel Products Co., the Western Electric Co., the National City Bank, the American Telephone and Telegraph Co., the Ingersoll Watch Co., the United States Mortgage and Trust Co., the Alexander Hamilton Institute, the Union Pacific Railroad Co., and the Bureau of Foreign and Domestic Commerce. Most houses engaged in foreign trade wish men with knowledge of the language of the country in which they are extending their business. They wish to fit men for work in Russia, South America, India, and China, as well as in the United States. The company usually pays \$50 to \$75 a month. The holder of the fellowship gives part of his time during the college year, full time during vacation. In addition, each man devotes his time to a study of business subjects in New York University. His work and his studies are adapted to his needs and those of his employer. The response to this plan was most gratifying. Over 300 applicants for these positions were received. As the work is experimental, only 15 fellows have been appointed. It is an opportunity for young men to secure positions that promise well; for business houses to get the pick of able young college men.

So many college men are now in residence preparing themselves for business careers that the university is considering the organization of a graduate division of the school of commerce, offering a specially planned course.

In these ways the New York University school of commerce, accounts, and finance is attempting to meet the various demands for business training made upon it.

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### THE AMOS TUCK SCHOOL OF ADMINISTRATION AND FINANCE, DARTMOUTH COLLEGE.

By H. S. PERSON.

The Amos Tuck School is a specialized, professional school of training for business; a semigraduate, finishing school for college graduates who plan to enter business. Its course consists of two years. The first year is of a grade equivalent to the senior year of an American college, to which are eligible for admission candidates who have completed three years in any college of high standing. The second year is a purely graduate year, at the end of which students receive the degree of master of commercial science. The curriculum of the first year represents a transition from the liberalizing courses of a college to the specialized courses of a professional school of commerce and administration; the curriculum of the second year is a compact group of specialized, professional courses, with a moderate flexibility allowing preparation for special branches of business, including foreign commerce.

The Tuck School has a definite relation to the elementary and secondary schools and to the colleges of the United States. To them it leaves, with respect to the students who may come to it, the cultural and mentally liberalizing influences of their educational processes. Of them it demands a broad foundation

of training in the physical sciences, language and literature, and the social sciences; and of the college in particular it demands a thorough training in political science, history, and especially economics.

As a superstructure added to such a foundation, the school offers:

1. In its first year, courses in the primary functions of business common to all business, to insure that, with respect to preparation for business, the student's training shall not be too narrow. These functions comprise the financing of a business, the recording of the results of business operations, the technical organization and management of a business, the production and marketing, equipment and processes of a business.

2. In its second year: (a) More advanced courses in the above business functions, with the addition of a course in commercial law; (b) special courses affording the student opportunity for specific preparation for a particular business (e. g., foreign commerce, banking, etc.); (c) the opportunity for preliminary practical experience through the requirement of a thesis which represents the solution of a real problem in some plant of the business for which he is preparing.

By its entrance requirements, the Tuck School secures an automatically selected group of students more mature than the average of American college students, of higher average ability and capacity for serious work, and with a more uniform and thorough grounding in the sciences fundamental to business; in general a more homogeneous group as to preparation, purpose, and capacity for hard and sustained effort. These facts throw light on the quality of instruction possible in the school, and on the quality of response the school may reasonably demand of its students.

The Tuck School does not presume to train complete business men, but offers to the business community high-grade, mature, adaptable apprentices, broadly informed as to facts and principles of business, intensively informed with respect to the facts and principles of some particular field of business, and capable of assimilating rapidly the results of experience in business.

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## HARVARD GRADUATE SCHOOL OF BUSINESS ADMINISTRATION.

By EDWIN F. GAY.

The establishment of the business school as a graduate department of Harvard University occurred in March, 1908. The school aims to give a specialized preparation for business. The instructing staff includes men who give their entire time to this work, and men from the business world. The cooperation of business men is of great value and is shown also in their willingness to open their factories as laboratories for our students. Each candidate for graduation writes a graduation thesis and is expected to work in the summer between his two years in the school.

There is a lack of assembled information regarding the business subjects taught. Research alone can collect such material. The work of the bureau of business research of this university is valuable in this connection.

Throughout the work of the school the development of the professional spirit is emphasized in the instruction.



*NINTH SESSION.*

The ninth session was held in the Pan American Union Building, Tuesday afternoon, January 4, at 2.30 o'clock. Mr. Roger W. Babson presided. This session may be considered easily one of the most important of the program on commercial education in the United States in view of the fact that from the standpoint of priority and efficiency, particularly in reference to preparation for foreign trade, the claims of the extramural educational agencies represented at this session were presented in a series of papers by the directors of these educational activities. Authors' abstracts of the papers follow:

**INTERNATIONAL CORRESPONDENCE SCHOOLS.**

By T. J. FOSTER.

The International Correspondence Schools had their birth in a desire to improve the conditions of the miners of the State of Pennsylvania. The Mining Herald, a weekly newspaper of Shenandoah, Pa., established a department devoted to questions and answers relative to coal mining for the benefit of its readers. With the aid of competent engineers, a course in coal mining was printed which anyone able to read English could study at home. Within six months after the enrollment of the first student, October 16, 1891, a thousand men were studying the mining course by mail. From this beginning has been developed the present system of correspondence instruction. Created to teach a single subject, the schools now give instruction in 280 courses, covering almost every branch of technical education and dozens of other subjects ranging from advertising and salesmanship to poultry husbandry and agriculture. These courses include 62,000 pages of text and 31,000 illustrations and cost \$2,500,000 to prepare. To conduct the work requires the hands and brains of more than 4,000 employees in America alone and hundreds in other countries of the world. They have enrolled more than 1,750,000 persons, representing every occupation in the realm of industry and every country on the globe; and approximately 100,000 new students are being enrolled each year.

The foundation of a system is its textbooks. To teach successfully by correspondence requires an entirely different kind of textbook than that used for classroom work. These books must take nothing for granted save the ability to read. They must begin at the beginning and proceed by easy stages, leading the student forward by natural and carefully graded steps. They must foresee and meet his difficulties by full explanations, demonstrations, and illustrations. Books of this class are used by 218 universities, colleges, Government schools, institutes of technology, and vocational schools in America. Successful home study depends upon a sustained interest on the part of the student. An Encouragement Department watches with a genuine personal interest the progress of their students. Last year the encouragement department of one school sent 1,110,204 letters of inspiration to students. As a result of this work, students to-day are doing 56 per cent more studying than in 1906. In 1914 the students of this school sent in for examination 1,141,430 lessons. The London instruction department handled in one year 358,000 lessons. Recently, to obtain specific information, an investigation was made of the cases of 27,000 typical students in a few Eastern States. Among the cases investigated 2

students were found who now have incomes of \$50,000 a year, 6 who have incomes of \$25,000 or over, and 20 who receive \$10,000 per year or better. Out of these 27,000 students, 14,990, or 54.2 per cent, are receiving \$1,500 a year; 2,451, or 9 per cent, are receiving at least \$2,500 a year; and 413, or 1.6 per cent, have annual incomes of \$5,000 or more.

Some of our best American colleges and universities have frankly admitted and adopted the method. Chicago University offers 52 courses by correspondence. The Universities of Minnesota, Wisconsin, Nebraska, West Virginia, and several others have adopted the method and are achieving some satisfactory results. Latin America has proven a good field for correspondence schools. One school, besides offering courses written in English, also offers courses written in Spanish. This company did a very good business in Mexico before the war and is now doing a considerable business in Cuba and in the South American Republics. This school has a good business in the Argentine Republic and conducts an instruction department at Buenos Aires. This department also handles the work for Chile, Peru, Uruguay, Paraguay, and southern Brazil. Seventeen technical courses in Spanish and 138 in English are now being sold in these countries.

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## NATIONAL ASSOCIATED SCHOOLS OF SCIENTIFIC BUSINESS.

By SHERWIN CODY.

Something like two years ago the leading mail-order house of New York determined to raise the standard of its office force all along the line and instituted a series of written examinations or tests of ability to perform usual operations in the business office, arranged in four general grades, with rather elaborate variations to fit their different departments. In two years they have very materially raised the entire standard of their office work; they have high-school graduates where before they had grammar-school graduates, and they have first-raters where before they had average mediums. They believe it pays, and they are developing their tests and supplementary training on a larger scale than ever before. At the last annual meeting of the National Association of Corporation Schools, the Curtis Publishing Co. exhibited a series of similar tests which they had been using. A large life insurance company has in regular use a somewhat complicated series of psychological tests. Experiments with systematic tests for office help in business houses have nearly all been tried by trained educators. A thoroughly wide-awake schoolman seems to learn business very much more rapidly than a person of business training solely learns the true science of testing and training young brains. The success along this line has suggested that the business men ought to take hold of our commercial schools and have these tests of ability to perform common operations in the business office substituted for the academic examinations now all too general. The first stand for speed and accuracy on simple and common operations, while the second consist largely of answering questions and giving definitions on the higher theory of the subject. The trouble is that the educators know only in a general way what the business men want. If the employment managers would work out a series of tests on which they would be willing to make appointments, there is no doubt that the educators would promptly adopt them, because their students are all working for jobs, and anything that will help them get jobs will be quickly seized.

The National Associated Schools of Scientific Business has been incorporated as a committee under the laws of Illinois. The organization is not for profit directly or indirectly, but is devoted to the public improvement of office efficiency both in schools and in business offices. Gov. W. N. Ferris is the president and Sherwin Cody the managing director and secretary. This committee has concentrated its attention on developing and trying out a series of elementary tests of ability to perform common operations in the business office, so as to measure speed and accuracy and also to test the fundamental education which all office employment presupposes and without which not even an office boy gives promise of future success. A series of tests was devised and printed in June, 1914, and tried out on employees by the employment managers of the National Cloak & Suit Co., the National Cash Register Co., the Burroughs Adding Machine Co., the Commonwealth Edison Co. of Chicago, Swift & Co., and in a limited way Marshall Field & Co. The object of the tests was to find out what were practical, how long the tests needed to be, what different kinds of tests were required. As a result 20 short, simple tests were devised which met the unanimous approval of the employment managers of the houses that cooperated, and were adapted to trying out in about an hour's time the following common classes of office employees: Office boys and girls, general clerks, stenographers of lowest grade, stenographers of secretarial class or beginning correspondence, and beginning bookkeepers.

The third edition of the National Business Ability Tests now published will give on the record blank, side by side with individual markings, the average of grammar-school graduates under the head of grammar-school education, high-school averages under the head of high-school education, and business-house averages under the head of business efficiency, or minimums that seem to be accepted widely as standard. Any good clerk can easily learn to give the tests and also to grade them by the key with speed and uniform accuracy. In certain things, such as figuring, spelling, typewriter operation, filling out business papers, filing, and copying, the business world demands approximately a 100-per cent standard of accuracy, while the schools have a tendency to operate on a 70-per cent standard appropriate to Latin and Greek where the 100-per cent standard is manifestly impossible. The National Business Ability Tests, if they can be generally established in business offices and schools, will undoubtedly stimulate schools to adopt the 100-per cent standard in some such matters as spelling. Of course this narrow, specialized proficiency is a good thing only in a few certain lines. In other directions the broad power to think in a clear businesslike way is far more important and more difficult to develop; but the practical test on answering letters ought to induce schools to abandon teaching merely the external forms of letter writing and give some attention to handling human nature skilfully and accurately, putting accuracy, tact, and good feeling into letters and cultivating the large outlook of human service in business.

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## UNIVERSITY EXTENSION WORK FOR MEN IN BUSINESS.

By SAMUEL MACCLINTOCK.

Business is becoming increasingly more exact, more scientific, and therefore professional. Knowledge consequently becomes indispensable for its successful conduct, and business knowledge becomes a synonym for commercial power. This is just as true in Cuba, Honduras, and the Argentine as it is in the United States of America.

It is extraordinary, but true, that business is the only great occupation which a man can enter to-day without previous special preparation. No one can become an engineer, a lawyer, an architect; he can not become even a stonemason or a motorman on our street cars without some previous preparation; but he can go into business no matter how inadequately he may be prepared in the science of business. After entering upon his business career, the average man has been inclined to depend upon his personal experiences as his sole means of advancement. He has looked to precedents. He has tried to do things just as others have done them. There must be, and fortunately there is, some more direct, more scientific, and more economical plan by which every man who will may gain that knowledge and insight into business which makes for power and success. In response to the demand of modern business for exact knowledge, a number of our best universities have established within the past few years special schools of commerce and administration for the preparation of students who want to make professional careers in business. Such schools offer a valuable training, but how many can avail themselves of it? More than 85 per cent of our boys and girls leave school before they are 16, and never do any systematic studying after that. In the whole United States there are only 22 definitely organized schools of commerce and administration. The total number of enrolled students in the regular classes is apparently about 6,000. Consequently, this course of training is only for the favored few.

Some of our leading universities, recognizing the very limited numbers which they are serving, have endeavored to extend their usefulness to those who can not come to the campus by taking the university to the people, at least within their own States. This extension work of the university away from the campus is carried on in several ways, the chief of which are: (1) Classroom instruction, (2) lectures, and (3), above all, correspondence. Classroom instruction is not essential to adults who know how to study and are in earnest in seeking information. The second method—evening lectures—is excellent for the purpose of arousing interest and enthusiasm, but is a poor means of carrying on systematic instruction. Correspondence work remains as the chief means available for carrying on organized instruction for adults engaged in business. The first advantage of this method is that it comes to the student at his home, office, or factory, through the mails and at his convenience. The work is carried on by means of textbooks, lesson assignments, examination papers, and problems. The student sends in his written work to his instructor, who criticizes it, grades it, and returns it with such comment and suggestion as may be needed. In this way the student goes through the subject in orderly fashion, mastering each lesson as he goes and consulting his instructor by correspondence if serious difficulties arise.

The number of colleges and universities having correspondence departments is only 32 in the whole United States, and the total number of students enrolled is approximately 20,000, including the large number taking agricultural work. The number of students thus engaged in studying business subjects is certainly not more than 10 per cent of the total number enrolled—a mere handful of all those in business who could profitably be supplementing their personal work and experience by this broader knowledge of others.

The universities, furthermore, are not the only sources of knowledge of practical value to the business world by any means. But our State and Federal Governments go to great expense to collect information about business and useful for business which, nevertheless, is but little used. The distribution of knowledge is as great a social and economic need as is the discovery of new truths.

The demand for practical business training and the inability of the established educational institutions to supply it have led to the founding, during the last few years, of a considerable number of schools operating on a commercial basis and endeavoring to supply the want. There are possibly over 100 such schools in existence today. Most of them are poorly organized and poorly conducted and have but a limited enrollment.

The reputable correspondence schools use university extension methods in supplying, at a relatively small cost, practical training of a vocational character to all adults who desire to learn something worth while, wherever they may live and whatever their previous education. Over 300 different subjects, including the mechanical trades, professions, arts, sciences, languages, and business subjects, are being successfully taught to-day by the correspondence schools. Their text material, lessons, quizzes, examinations, and practical problems are often prepared with great care and at great expense by business and professional authorities of the highest rank. Such material is characterized by clearness, simplicity, directness, and comprehensiveness. In the high-grade correspondence school the instruction staff likewise is made up of well-trained specialists. The pedagogy of correspondence study is absolutely sound. The student takes the training along with his daily work at the very time when he needs it most, thus happily combining the theory and the practice of the subject. It must not be supposed, moreover, that the modern extension university confines its work exclusively to formal instruction. In addition to such work it renders a highly useful service through its consulting department. It collects data upon current topics and developments in its various fields of instruction. Such an institution thus becomes a veritable clearing house for business information. The correspondence schools are distinguished from extension divisions of the resident universities primarily by being private enterprises. They are conducted to make a profit by rendering a service worthy of the fees charged and in response to a demand for something which the other educational agencies do not supply. Systematic extension study gives a man a more comprehensive and better rounded-out knowledge of the policies and principles that make for business success than can be obtained from personal experience alone or from any "hit-or-miss" system of unorganized reading. Systematic, organized business knowledge makes a salesman out of a clerk, a merchant out of a storekeeper, a producer out of a credit man, and a business general out of a manager. That it pays goes without saying. American industry has advanced in character and efficiency because correspondence schools, though only in their infancy, have developed the study habit in hundreds of thousands of men and women throughout the country. University extension work is truly one of the biggest ideas in modern education and one of the most hopeful plans for promoting the efficiency of adult workers in all lines of industry. I think I may safely say that in carrying on such work the La Salle Extension University, with nearly 30,000 student subscribers, and other such institutions are rendering to the business men of the country, and thus to the cause of general education and efficiency, a distinctly valuable service.

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### ALEXANDER HAMILTON INSTITUTE.

By JOSEPH FRENCH JOHNSON.

The Alexander Hamilton Institute is not a correspondence school. It gives no diploma and no certificate. Appealing to men of a mature type, it was necessary to develop the work along lines distinctly different from anything



ever tried before. In the main, such men fall into two groups: First, those who are already executives or in semiexecutive positions, or those who have the education to be in line for such a position; and, second, men holding highly specialized positions who should be in line for work of a more general character. Among the latter are mainly technical men, specialty salesmen, and the like.

Since the institute was organized, there have been enrolled about 35,000 active, ambitious, energetic men. It is interesting to note that the average age of a subscriber is about 32 years, and the average salary about \$2,650. A large percentage are college graduates, though a college training is not an indispensable qualification.

In planning the material of the course, it was necessary to keep in mind that there are really only four fundamental activities in every business—producing, marketing, financing, and accounting. The principles underlying these activities are fundamental and apply in all lines of business.

The institute provides for its subscribers a reading course paralleling a university school of commerce course, under the guidance of an active staff of business men and professional teachers. It also supplies, in the form of printed talks, lectures, and problems, as nearly as possible instruction similar to that given in college classrooms. Furthermore, it offers the free services of its staff in the reviewing of problems and in the discussion of such questions as the subscribers themselves seek light upon.

The text volumes form the backbone of the course. They bring to the reader a survey of business principles from the executive's point of view. But they are not the whole of a college or of a nonresident reading course. If we are to follow pedagogical methods developed in resident work, we need to get something to take the place of the instructor. Now, what are the instructor's functions? First of all, in assigning reading on a topic he gives an informal talk on it. Next he takes up some special point and elaborates on it. At the end of each session, through quizzes and examinations, he tests the student's understanding of the subject and his ability to use his knowledge in the solution of definite problems. Finally, he stands ready to assist the young man in case he has trouble in getting things clear in his mind. In planning the modern business course and service we arranged for a staff to do these very things in connection with the subscriber's reading of the textbooks of the course. Every fortnight for two years the subscriber receives by mail a group of pamphlets consisting of the talk, and either a lecture or a problem. The mere receipt of the material serves as a stimulus to regular and systematic reading.

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## THE COMMERCIAL MUSEUM OF PHILADELPHIA.

By W. P. WILSON.

The first two great international commercial congresses held in the United States were organized and conducted by the Commercial Museum of Philadelphia. To the first, in 1897, were invited, through the State Department, delegates only from the Latin-American nations. All of these countries were represented by 51 delegates. To the second, in 1899, all commercial countries were invited through the State Department, and delegates to the number of 300 responded from every leading nation of the world.

Two lines of educational work have been inaugurated and strenuously carried out by the Commercial Museum: The first, a *foreign trade bureau*, has ardu-

ously labored to convince the manufacturer of the urgent necessity of occupying some of the foreign fields of trade before they were possessed by other countries. This work has been pushed in all parts of the United States and with all lines of manufacturers whose products could find normal sale in any locality abroad. This foreign trade bureau furnishes the manufacturer with all necessary data on the requirements and opportunities of foreign markets and on tariffs existing in different ports of entry; on trade-marks and patent laws, consular relations, shipping routes and rates, and similar information relating to the invoicing and transportation of goods for foreign countries; methods of payment and granting of credits; competition to be met in foreign markets, and names of reliable business houses throughout the world. The bureau has a list of more than 375,000 foreign firms, with information regarding their lines of business and importance in the trade. It conducts a free reference library of commerce and travel, with over 78,000 volumes, containing over 400 foreign and domestic directories, both city and trade, official bulletins of every country publishing them, consular reports from all countries which issue them, 750 of the leading magazines, trade journals, and dailies, of which over one-half are from foreign countries. This library, with its very complete list of foreign documents, is used by a large corps of assistants for the direct benefit of exporting firms, and to give them the needed help they require. This work is done for any manufacturer at actual cost of investigation and compilation.

The second line of educational work done by the Commercial Museum is for the schools of the city of Philadelphia and the State of Pennsylvania. This work includes the following: (a) A special series of lectures in the museum to classes from the schools and colleges of Philadelphia and vicinity. These lectures cover subjects of geographic, commercial, and industrial importance and are adapted to scholars of all ages from the fourth grade up. Classes come to the museum by special appointment to hear these lectures, which are illustrated by colored lantern slides and motion pictures. At the close of every lecture the pupils, under the direction of experienced museum guides, study the exhibits which illustrate the subject of the lecture. These lectures bring more than 35,000 pupils to the museum every year and make the collections a great laboratory for the study of geography and commerce. (b) The loan, free of cost to public school teachers in all parts of Pennsylvania, of sets of colored slides, accompanied by lantern, screen, and typewritten lectures, covering the same field of geography, commerce, and industry. These sets of slides have now a very wide circulation, especially among the rural schools, and every year reach tens of thousands of pupils in all sections of the State. During the past year, 75,000 children from the State public schools attended the lectures. (c) The distribution, free of cost to public schools in all parts of Pennsylvania, of large collections of specimens to aid teachers in geographic and commercial instruction. These collections are not loaned, but remain permanently in the schools to which they are sent. They include the principal articles which make up the bulk of the world's commerce and represent the chief industries of mankind. The specimens are arranged to show the important raw materials and stages through which they pass in the process of manufacture. Thousands of these collections have gone to schools in all parts of Pennsylvania within the past few years. They are distributed under an appropriation made by the State for this purpose.

**THE NATIONAL CITY BANK OF NEW YORK.**

By F. C. SCHWEDTMAN.

The similarity of situation, political organization, and other characteristics of the American nations makes commercial education, with special reference to the needs of the continent, of the greatest importance to the members of this congress.

The National City Bank has for many years been engaged in fostering commercial education, coordinating theory and practice. The enactment of the recent Federal reserve act has enabled the National City Bank to extend its activities to the rest of the continent. One of the vice presidents, Mr. William S. Kies, together with a large corps of trained commercial experts, has devoted more than a year and a half to the development of industrial and commercial relations between the United States and South America. These educational efforts may be summarized as follows:

(a) The sending of experts to the various Central and South American countries to make careful observations at the different trade centers; (b) the keeping of this information up to date by commercial attachés named by the National City Bank at each of its branch banks, at present established in six Latin-American countries; (c) special systems of acceptances and dollar credits; (d) propaganda as to the importance of international trade in general with special reference to the South American trade; (e) publication of the special magazine known as *The Americas*; (f) special classes for the training of additional foreign banking and trade experts; (g) an employment office maintained where men suited for foreign commerce and those requiring such men are brought together; (h) the foreign-trade department renders aid and gives advice to all interested in foreign-trade matters; (i) the compilation of the most important facts relating to international trade and credit and which bear on South America—these are furnished free to both customers and non-customers of the bank.

In this work the bank has been inspired not only by commercial, but by patriotic reasons as well, due to the attitude to be assumed in the relations between the United States and Latin America by reason of the present European war, which is now converting the United States into the financial center of the world and the chief consumer of Latin-American products. The United States should be ready to do its part in supplying the necessary capital for the development of South America. To this end are directed the efforts of the National City Bank which is laboring to bring about a better understanding among the peoples of the continent, having ever in mind a unanimity of purpose in attaining the aims desired by all.

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**NATIONAL ASSOCIATION OF CORPORATION SCHOOLS.**

By LEE GALLOWAY.

As we have reached the commercial era which is permeated with the spirit of public service, commercial education is now given a place not only in the schools and colleges, but in the workday program of the business corporation itself. The corporation is assuming its share of responsibility by preparing its employees to do their work more efficiently, not only because it means profit to them, but because they are becoming public-spirited enough to realize that



training is the right of the adult individual. The corporation school is particularly well qualified to do this because there is a chance for actual experience in connection with the schooling and the opportunity to interpret abstract things in the light of concrete experience.

Commercial education as given by corporation schools is classified as follows: (1) Salesmanship; (2) general office, including accountancy. The students are mostly adults. Therefore adult psychology and methods of teaching to appeal to the adult only will apply. No matter how much personal hygiene, etc., is taught, this will not train the mind to do some particular thing well.

Classification of salesmanship courses includes: (1) Knowledge of the product and competitor's product; (2) personal methods of selling; (3) business policies; (4) business English; (5) advertising methods; (6) market distribution; (7) economics; and (8) organization and management.

The study of the product constitutes the only topic of many salesmanship courses. It is the chief thing in some businesses. It is intricate or not according to the nature of the product. An illustration of teaching the product may be seen in the method of the Norton Grinding Co., of Worcester, Mass. The length of time for this study, the methods of teaching, the teachers, etc., are considered in the writer's paper.

The change from the policy of *caveat emptor* to the "public-be-pleased" point of view makes the course in personal selling very important. The courses included under this are: (1) The selling process proper; (2) the study of the prospect; (3) psychology of gaining attention and interest; (4) the demonstration of the goods; (5) essential qualifications of the salesman; and (6) ethics of business.

The teaching of personal salesmanship was begun 20 years ago by the National Cash Register Co. It was crude in method, but has developed into quite comprehensive courses.

Business policy must be taught to arouse interest in the company and its merchandise. It is necessary, too, to reflect this policy of the firm by the proper demeanor of its representatives. The slogan of the United Cigar Stores Co. and the Larkin Co., as well as the more comprehensive method of the New York Edison Co., are given by way of illustration.

The study of business English is necessary in these commercial courses in order that the company may be represented accurately and pleasingly. Illustrations from the manual of the Larkin Co. are given to show one method of teaching this. Advertising and market distribution have not yet been taught systematically in corporation schools, although they are important subjects. Elementary economics deserves a place. An illustration of how it may be taught is given from the Goodyear Tire & Rubber Co.'s school. Organization and management are taught in very few schools.

The new movement in department-store education is accomplishing valuable results. There are about 50,000 sales people in New York City alone. The policy of the store was one of the first subjects to be inculcated, so as to get the interest of the individual aroused. Then followed the teaching of the store system, the care and arrangement of stock, the technique of selling, and finally the study of merchandise or knowledge of the goods, and business English. The Department Store Education Association in New York aims to study the methods and conditions of department-store employment and to develop salesmanship to the basis of a skilled occupation and give it a professional standard. An experimental school was held at Lord & Taylor's, and one is now conducted at Stern Bros. under the supervision of an educational director. The association is also trying to coordinate their work with that

of the public schools. In Boston, at the Union School, saleswomen attend classes in salesmanship.

The necessity of office-work schools and the method of teaching office routine are explained by the writer, and figures are given to show that the office school is a profitable investment.

In order to economize effort and expense, the National Commercial Gas Association is standardizing commercial courses for the men in the gas business. The distinctive features of such courses must be kept in mind. The gas company is a public utility organization, and the idea of service predominates throughout the course. During the first two years only salesmanship and organization were dealt with; during the third year the knowledge of the product, i. e., the utilization of gas appliances was taught, and now a three years' course is being organized embracing more general subjects. The National Electric Light Association is beginning a similar correspondence course.

In order to interchange ideas concerning corporation schools, the National Association of Corporation Schools was organized by a number of interested companies. The work and problems of this association are described.

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#### BUREAU OF COMMERCIAL ECONOMICS.

By FRANCIS HOLLEY.

The Bureau of Commercial Economics is an institution which shows by the graphic method of motion pictures how things in common use are made and produced, and from what sources the raw material is obtained, and under what conditions labor is called upon to serve in their production. It is an institution that has been organized under the general educational law; it has no capital stock; it is not operated for profit, and has been affiliated with 106 of the universities and colleges of the country, including nearly all of our State universities. It shows, for instance, in motion pictures, sheep ranging on the foothills and on the plains in both America and Australia. It shows the care and protection of these sheep, the treatment for disease, the dipping and washing and shearing, and then it follows the bale of wool to the making of cloth and clothing of every description. It shows the taking of the hides and the various processes of tanning, the old method and the new, and the making of shoes and gloves. The films then recur to the flesh of the animal and show, in motion

pictures, furnished by the great packing houses, the various processes of making it fit for the table, and the final disposition of the by-products. The cattle and hog industry is treated likewise.

The films show the making of glassware, pottery and china, mining, making of all classes of garments, raising of rice and sugar cane, making of silverware, canned goods, cutting of timber, and making of wood pulp and paper, the harvesting of hemp, and the making of cordage, lace, carpets, rugs, oilcloth, and linoleum. The films of the bureau depict the making of all classes of electrical equipment, turpentine and creosote, antitoxins and vaccines, and various types of drugs and medicines. The films of the bureau include a series showing the action and reaction in chemistry—analytical, industrial, and commercial—in the making and production of commercial fertilizers and dyestuffs, and the like, and also a complete series in road building. The silk industry is clearly shown. The films depict the making of the felt hat, show the making of varnish and buttons, the gathering of rubber and the making of pens and tires, the pumping of oil and its treatment, transportation, and uses; the engraving and printing of bonds and securities, and the surveying and construction of railways and railway equipment; the printing and binding of books and magazines, and the manufacture and uses of fiber of all types; the production of roofing material from old rags and the operation of machinery in our city laundries; the care with which milk is obtained from the modern dairy, and the sterilization and pasteurization of it as a protection to the public health and the production of canned milk and other products of the dairy, including the creameries.

In addition to the industrial films which the bureau has in circulation, there is a large number in the series of travelogues. These travelogues show all of the transcontinental lines from the Canadian border to the Mexican border. In our collection which is being made for us now by the Canadian Government we will be able to show the seal and fur industries along the Arctic, and the apple industry of the Province of Ontario; and we are in receipt of all of the films of the Commonwealth of Australia, which have been intrusted to us for use in our crusade for public instruction. The bureau has also the films of the Republic of Bolivia, and will shortly have those from Argentina, showing the trans-Andean lines and all of the activities in stock raising in the great pampas of Argentina.

The work of the bureau is given in the various State universities, with appropriations provided by the legislature of the several States, to encourage extension work, and in many instances, in missions and other organizations which may be benefited by their display. The work of the bureau is also carried on before the chambers of commerce, boards of trade, and commercial bodies, and fraternal organizations, and in the summer time they are given in the parks and playgrounds of the various cities. No film is shown for money. If it is clearly educational, divested of all advertising, and shows a process, it will be displayed free of expense to the producer. It, however, carries a credit line, simply giving the name of the donor. No film is shown where any admission charge is made to the public. The work of the bureau is perpetuated through the election of its directing offices by an advisory council composed of college presidents and men of international distinction in science and letters. The bureau is maintained through contributions and annuities. Contributions are invariably voluntary, and no one is authorized to solicit the same. The surplus funds of the bureau will be used in the production of welfare films. first aid to the injured, including the resuscitation of the drowning and the emergency methods of rescue of imprisoned miners, and the awakening and development of civic pride and patriotic American citizenship.

**TENTH SESSION.**

The tenth and concluding session of this subsection was held jointly with the several subsections of Section IV, Education, meeting at the New Willard Hotel, Friday afternoon, January 7, 1916, at 2.30 o'clock. Sr. José María Gálvez, of the University of Chile, presided. At this joint session the following Pan American theme was discussed in conference:

*How can a nation prepare in the most effective manner its young men for a business career that is to be pursued at home or in a foreign country?*

(a) *In schools that are a part of the public school system.*

(b) *In schools of private endowment.*

(c) *In special business schools of private ownership.*

*Outline a course of study that will best prepare young men to engage in such a business career. Each suggested outline should consider not only the character of the educational system of the country for which the course of study is intended, but the desirability and practicability of a uniform course of business education for all Pan-American countries.*

The following are abstracts of papers presented by the Latin-American contributors:

FRANCISCO ARAYA BENNETT, Director of the Commercial Institute of Valparaiso, Chile.—As a general rule all extensive commercial undertakings in Latin-America are carried on by foreigners. Commercial education in these Republics takes cognizance of this fact, therefore. The Chilean youth, for example, who wishes to succeed in the commercial world seeks a position with some English, American, French, German, or Italian firm. To be admitted into a foreign house, a knowledge of modern languages is necessary, particularly English. For some time past aspirants for a commercial career have prepared themselves in English private training schools, but since it was noted that they had to compete with the foreign employees of these same houses, even more preparation has been deemed necessary.

There was formerly a common belief that a merchant was born not made, that a merchant by vocation knew certain things without being taught. Aside from the profession of a merchant, there were certain trades which might be studied, e. g., stenography, bookkeeping, typewriting, etc. For this purpose, then, instead of commercial institutions there were separate courses given in these branches. The American business colleges have flourished everywhere, offering usually at a high price rapid courses in these branches and guaranteeing lucrative employment on completing the course. We now no longer believe that a merchant is specially gifted, but that a normal man with appropriate training can develop particular skill and achieve satisfactory results in any sphere of activity. All now recognize that the quality is more important than the number of the inhabitants. Everywhere we are endeavoring to improve public education, and to give to our citizens the best possible training for their own well-being, and with it that of the nation. Modern means of locomotion have erased distance, uniting the globe in one market. The example of the merchant, chief agent of the circulation of the world's wealth, reflects better than anything else the transformation in commercial teaching.

The productive power of the British Empire, the United States, Germany, Austria, Belgium, France, and Italy has reached such a stage that the world

has been alarmed at the specter of over-production; and one nation, Germany, has proclaimed the necessity for preparing her merchants especially for this congestion, opening with intelligence and perseverance those markets which show possibilities of success. Even those merchants, trained in established traditions, have noted the effects of this systematic preparation and have made ready to arm themselves for the economic struggle. The merchants of Latin America have had a different problem to face from those of Europe and the United States, as these Republics are producers of raw materials, food stuffs, or only partly manufactured supplies. The Latin tendency, inherited from Spain, which tends toward the literary professions, makes even more vital the necessity for a change in public instruction. In the university, instead of studying only a political economy based upon foreign books suggested by observations of other social conditions, one should devote himself to the study of his own national conditions. In general Latin America lacks opportunities for a common study of her interests and ideals. It has common problems, yet each part seeks solutions for its own difficulties without waiting, as it should, for the results obtained by others facing the same conditions. In the educational field the problems differ substantially from those which confront the United States. British tradition is very different from Iberian. English democratic customs are not like those which have been acquired through the inherent absolute monarchical system of Spanish origins. - Latin Americans should endeavor to create, like the States of Germany and of the United States, economic relations which would permit them, facing common necessities and recognizing their own peculiar problems, to establish satisfactory and mutually advantageous customs—and trade relations in general.

South America has been colonized upon the coasts and that is why there still exists in the center an immense unpopulated area. It lacks the railroad systems which bind together the States of the United States, a lack which the rivers do not supply. The creation of a Latin-American commercial university would accomplish more than anything else to join the Latin-American Republics in bonds of confraternity and common welfare. For secondary commercial education each State can provide for itself, but when it comes to the university, it seems that no one of the Republics separately can establish it; and all need it. Commerce is a bond of union. The Latin-American countries are in the matter of economic development more or less on the same plane. They are not, generally speaking, competitors of each other. Europe and the United States are the great supply markets for all of them. They appreciate the benefits of this foreign commerce and of foreign capital, but at the same time believe that each country should prepare itself to develop its own resources. The United States and Europe are for them on the same plane commercially. The Latin Americans need, therefore, to study their own interests from their point of view as producers of raw materials. A commercial university should look chiefly toward economic studies which should not be mere abstractions, but should furnish the opportunity for research work in economics applied to the various countries in Latin America. Two plans are proposed for the secondary phase of commercial education: (1) To prepare the future merchant in a school of general character and then send him for his special training to schools where he may study stenography, typewriting and office practice, bookkeeping, accounting, exchange, banking, customs, and fiscal matters; (2) to send him direct to special schools of commerce at any early age for his commercial training. His training should be here both general and special. This plan is followed by the Chilean Government. The plan proposed by the Instituto Comercial of Valparaiso for secondary commercial training seems most acceptable.



With English as the basic modern language, thoroughly taught and acquired, the young "junior" in commerce, on finishing this school at 15 or 16, has through his skill in rapid and accurate figuring in simple commercial practices a great advantage over the clerks carried from England for this purpose and shows great adaptability in his development from a mere clerk to a subordinate independent executive position. The course of study in the institute of Valparaiso offers also history, particularly of Chile, the elements of modern law, customs and exchange, German, and hygiene.

SR. A. AUBERT, Leon, Nicaragua: A commercial career must be the outcome and part of some system of general and industrial training where young men may acquire not only the rudiments of knowledge necessary to any determined and special calling, but a mastery of those elements which must perforce establish an unmistakable superiority and advantage of what may very properly be called "skilled training" over and above the more common and ordinary form of "unskilled labor." Technical training is of great advantage whenever a classification of service exists. Such a classification exists whenever individual efforts are considered as mechanical and administrative. The first refers to unskilled and rudimentary labor and the second to that product of ability and knowledge due to skillful and adequate training for managerial and administrative employments, and obtained and acquired in competent and well-established centers of education. The different callings require different degrees of skill. A clerk behind a counter, an accountant in his office, a manager of a concern, a carpenter, a blacksmith, and a mason furnish examples of this, but the economic results of these degrees of skill depend evidently on efficiency and proper training.

The value of technical education can not be overestimated. It is invaluable both to the individual and to society, becomes a sort of propelling force toward the advancement and progress of any civilized country and State. In the business world this want of skilled training is keenly felt. Governments and municipalities have, further, to face a series of perplexing economic and administrative problems of organization and management in which the counsel, advice, experience, activity, and labor of the trained expert offer incalculable service. Efficiency is demonstrated to-day as never before. A well-known writer recently said: "The average young man of to-day without a trained mind equipped with a previously acquired foundation of facts is not, in the narrow place to which the division of labor assigns him, in a position to grasp the breadth and depth of this business."

A uniform course of commercial instruction for all the countries of the American Continent may be established for the different kinds of schools enumerated in the writer's paper as sections A, B, and C under the following curriculum, which may conveniently be divided in a full course of three years, and for young men who have been previously prepared or who may have acquired beforehand a knowledge of the three R's or the benefits of a high-grade school: Grammar, arithmetic, languages, geography, accounting, bookkeeping, stenography, typewriting, economics, customhouse laws, port regulations, commercial law, shipping and transportation, correspondence, and history. Each subject should be so presented as to afford the necessary scope and extension which will secure the desired end.

SR. M. DELLEY, Director School of Commerce, Caracas, Venezuela.—The prosperity of a country and the peace of the world are due to commerce and to its instrument, credit. Adequate educational preparation for commerce is highly

necessary. Latin America, owing to its natural resources and proximity to the Panama Canal, should begin immediately this educational preparation.

Diversified business and division of labor have made it impossible to train young men by the older system of apprenticeship. The German modification of this system, through compulsory supplementary school instruction, is the modern and successful type. The subjects usually taught in the school-apprentice course of three years are accounting, commercial arithmetic, business correspondence, commercial law, economic geography, and one foreign language. Germany has 650 of these schools; Switzerland, 110; and England has 250,000 pupils enrolled in 6,000 classes.

A course of instruction in a school of commerce is absolutely necessary to young men engaged in the practice of commerce to-day, as the special character of work he has to do makes it impossible for him to correlate his work. Elementary commercial schools with a course of two years will give the elementary technical knowledge for an apprentice and will shorten the term of service in actual practice. The higher schools, with courses of 3, 4, or 5 years, will reduce likewise the period of service and will give in addition to the technical training that general knowledge which is helpful in the higher positions. These schools should be supplemented through higher training schools, like collegiate business training courses and universities of commerce.

The Latin-American countries have attempted largely to establish commercial instruction after European models. It would be better to evolve a system according to native needs and conditions. For the present, the great trouble is that of a satisfactory elementary course. The later courses will proceed naturally from this.

Mexico, Panama, El Salvador, Ecuador, Honduras, Bolivia, Chile, Argentina, and Venezuela have shown great interest for this phase of education. There is, however, no uniformity in their plan of instruction. Commercial education is particularly necessary in the Latin-American countries, owing to the fact that the Latin-American boy matures early, is restive under discipline, and has the tendency to enter a business house too early. Uniformity in plan and method of instruction, the establishment of a common type of school in Latin America, may be possible since the work is recently established in these countries. The best type of school for such a purpose is one of three years, beginning with pupils 14 years of age. A suggested course of study is the following:

*Schedule and course of study.*

Studies.	First year.	Second year.	Third year.
	<i>Hours.</i>	<i>Hours.</i>	<i>Hours.</i>
Native language.....	4	2	2
First foreign language.....	6	6	6
Second foreign language.....	3	3	3
Arithmetic and algebra.....	3	3	0
Accounting and commerce.....	6	3	3
Commercial practices.....	0	5	6
Local commercial products.....	0	0	2
Physics and chemistry.....	2	2	0
Merchandizing.....	0	0	2
Economic geography.....	1	2	2
History of commerce.....	0	1	1
Commercial law.....	0	1	1
Political and commercial economy.....	0	1	1
Penmanship, typewriting, and stenography.....	2	1	1
Total.....	27	30	30

DR. SANTIAGO H. FITZSIMON, Professor, International Correspondence Schools, Buenos Aires Branch, Argentina.—The public school system of Argentina has been influenced greatly by the example of the United States. One of the first measures of President Sarmiento, on returning from the United States in 1860 was the establishment of the Normal School of Paraná under the direction of a North American. In this school the teachers of the public schools have been trained. Further, American scientists, like Gould, have introduced American methods into the higher schools. Not until 1890 was anything done for commercial education, although Alberdi in 1852 urged the establishment of commercial schools in the larger commercial cities. Dr. Victor M. Molina introduced a bill in Congress in 1889 for the establishment of two schools, in Buenos Aires and in Rosario de Santa Fe. In 1890 the first national school of commerce was established. The course proposed was liberal in character, based on general training studies supplemented by special courses. A succession of distinguished ministers of public instruction have been deeply interested in this school. The course was enlarged and two additional schools established in Buenos Aires, one for males and one for females. Schools have been established likewise in Rosario, La Plata, Bahía Blanca, Concordia, and Tucuman.

His Excellency, Dr. Romulo Naón gave this work his special attention and introduced important reforms as minister of public instruction in 1910. The work is now divided into elementary, secondary, and higher or university. The elementary courses are given at night and prepare business clerks and bookkeepers. The secondary course contains studies that develop intellectual discipline. The university course, given in the faculty of economic sciences of the university, prepares commercial and administrative chiefs and professors of commerce.

The elementary course prepares business clerks in three years, and bookkeepers in four. It includes the following subjects: *Compulsory*.—Arithmetic, business methods and accounting, Spanish and commercial correspondence, history of Argentina, general and commercial geography, penmanship and type-writing. *Elective*.—English or French, commercial products and stenography.

The higher course graduates mercantile experts in five years. It includes the following subjects:

	Years.
Mathematics: Arithmetic, algebra, geometry-----	5
Drawing-----	2
Spanish: Grammar, composition, literature, and commercial correspondence--	5
Practical business course and accounting-----	4
Natural sciences: Natural history, physics, chemistry-----	4
Mercantile technology-----	2
General and commercial geography-----	4
Elements of political economy-----	1
History of Argentina, of the American countries, and history of commerce--	4
Customs regulations-----	1
Elements of commercial law-----	1
English-----	5
French-----	4
Penmanship-----	2
Stenography and typewriting-----	2

Gymnastics and athletic sports for pupils of the first three years. For those of the two upper years: Rifle range shooting and drilling.

The writer describes at length the various courses of study pursued. Commercial education in Argentina, he shows, is aided greatly by its Commercial



Museum, where the student is given easy access to, and afforded the largest opportunity for, the study of the products of the world and investigation through printed documents, specimens, and the use of instruments. For the study of geography there is also a special geographical laboratory.

Private schools are generally free from any governmental control. The Buenos Aires branch of the International Correspondence Schools is held in very high esteem. The subjects of greatest importance are: Commercial arithmetic, business correspondence, accounting, penmanship, typewriting and stenography, Spanish, English, and French. The faculty of economic sciences of the university was established by law two years ago. Its curriculum and regulations are printed in a separate program, issue of February, 1915.

Graduates of the higher commercial schools and of the faculty of economic sciences are fitted, in the opinion of the writer, to enter any business or banking establishment in any country where Spanish, English, or French is spoken. The writer urges that special courses in Spanish and Portuguese be added to the curricula of the schools of commerce of the United States, and that stress be laid on the study of the natural resources, geography, and history of the Latin-American countries.

Dr. ANTONIO L. VALVERDE, Professor, School of Commerce, Habana, Cuba.—The course of study in the School of Commerce of Habana, a part of the Institute of Secondary Instruction of Habana, was established by decree November 15, 1900, and consists of the following: Arithmetic and algebra; universal geography; commercial arithmetic; bookkeeping and accounting, commercial and public; commercial practices; industrial and commercial geography; political economy and elements of public finance; statistics; commercial law and commercial international law; history of commerce and commercial products; and English and French. Graduates, after a grouped course of four years, obtain a degree of mercantile professor. This academic title is of small consideration in Cuba, although this country has had a rich development in agriculture and commerce since the establishment of its independence. The personnel of banking houses, etc., is largely office trained.

The course of study is not sufficiently comprehensive and should be enlarged so as to prepare for any career the success of which depends on commercial training, e. g., commercial agents, consuls, custom officials, Government inspectors, accountants for governmental and public utility service, etc. The courses should be so constituted as to include the following: Bookkeeping and general commercial accounting; commercial practices, with particular reference to banks and exchanges; industrial and commercial geography; political economy and finance, with relation to commerce; commercial statistics; commercial law and international commercial law; the elements of civil and administrative law; laws on patents and trade-marks; history of commerce and commercial products; English, French, and German languages; fiscal and customs laws and practices; consular laws and practices; the comparative study of foreign commercial laws; and the writing of public and commercial papers and documents. This curriculum should be made general for all the countries of the continent, and the method of instruction should be uniform in every grade of commercial school. The writer distributes the courses in the different groups so that the careers may be studied of mercantile professor, the doctor or licentiate in commercial science, the commercial agent, the customs inspector and customs agent, a consular and the expert appraiser.

Commercial education has been neglected. Its importance, however, is receiving more and more recognition. The method, content of study, and effort necessary to prepare to engage in commerce is in no sense inferior to that required to prepare a lawyer, physician, or engineer.

**DR. AGUSTIN T. WHILAR, Lima, Peru.**—Commerce is the instrument of civilization. It is concerned with barter, commissions, marketing, transportation, money, banking, insurance, exchange, food and textile products, building material and articles of luxury, merchandise, public and private commerce. The character and scope of commerce require a high degree of professional and moral training for the merchant. This instruction should be educative and instructive in the largest measure and presented in the most scientific manner. It should include a knowledge of the commercial languages; the history of the various countries—their literature, customs, resources, industries, and commerce; the applied sciences and mathematics; the mechanical practices and methods of business; political economy, business ethics, and psychology; commercial, civil, administrative, and international law; accounting, finance, etc.—in a word, commercial science.

The International Exposition of London, 1851; of Paris, 1867; and of Vienna, 1868, inaugurated an international commercial struggle. This struggle has led to the establishment of commercial museums, export societies, improved consular methods, and a conscious need in the various countries for improved commercial education.

Commercial instruction is of two grades, (1) professional and (2) academic. The special or professional training may be divided into three classes, lower, middle, and upper. These are distinct types and do not grow into each other like elementary, secondary, and higher instruction. The course of study in each type of school is complete. The elementary type is not fixed for the different countries. The practice is more or less general in adding general culture studies in the secondary type. The upper type is best seen in the model College of Commerce of Antwerp and the Commercial Institute of Rome. The academy or university type is more advanced and more highly developed in the United States, England, Switzerland, Belgium, and Italy. The "Luis Bocconi" Commercial University of Milan, Italy, furnishes a fine example of this type of school. The plan of study of the commercial universities of Pan America should correspond to this school, with a compulsory course in general knowledge and elective specialties. The greatest obstacle in America to the establishment of commercial instruction is the dislike for commerce of the upper classes and the prevailing tendency for those who have failed in the academic courses in school or college to undertake the business training courses. Lack of sympathy has further prevented adequate equipment in the way of buildings, teachers, etc.

The author urges the establishment of commercial education in the larger commercial cities, with its introduction according to the two different grades and three classes in the private and public grammar and secondary schools. The preparatory sections thus established should furnish a thorough training in the fundamentals and give to the student a due sense of the value of the profession of business and desire to study for the same in the special elementary, secondary, and higher schools of commerce. He urges, further, public and private subventions for the higher schools and Federal aid for the establishment of the lower and middle schools with a uniform plan of study; aid of the larger commercial and industrial interests in the establishment of a university of commerce in the capital of each Republic; annual visits and award of prizes to the best pupils, whose work should be judged by a committee composed of visiting members appointed by the Government and the chambers of commerce; and the establishment of night schools and of courses of study that will give an international viewpoint to the students engaged in its pursuit; the establishment of scholarships and the demand for a student's certificate of business aptitude for public positions that require technical knowledge; a satisfactory entrance

requirement for the various grades of commercial schools; remission of the customary scholastic fees; and the creation of the doctorate in commerce. He urges the creation of a superior council of technical education, to have charge of this phase of education, and insists that the course of training be both theoretical and practical, experimental, educative, as well as instructive; that the instruction should not be given without the necessary material and equipment, such as a museum, laboratories, library, business office, and model bank, and that ample opportunity be given for visits by the students to commercial and industrial plants.

The writer proposes the following courses:

A. A two-year course for elementary commercial education in grammar schools: The native language taught with reference to commerce; commercial organization, national and international; simple accounting; economic geography and commercial arithmetic; penmanship, stenography, and typewriting; drawing and manual training; commercial practices and visits to commercial and industrial plants.

B. A three-year course for secondary schools. This course is similar to course "A." It adds commercial correspondence, bookkeeping, and a modern language, omitting accounting and business organization.

C. A four-year course, including a preparatory year, for the elementary commercial schools: Preparatory year—elementary mathematics, native language, universal history, drawing, and penmanship; second year—native language, business organization, elementary mathematics, typewriting and drawing, physical and military training, and vocal music; third year—native and foreign language, economic geography, bookkeeping, stenography, physical and military training, and vocal music; fourth year—business correspondence, accounting, history of commerce, elements of political economy and common law, stenography, commercial practices and visits to industrial and commercial plants.

D. Four-year course for secondary commercial schools: Native language, business correspondence, commercial languages, literary history, commercial economic geography, history of commerce, statistics, applied mathematics, transportation, merchandising, industrial and agricultural implements, commerce, general accounting, social and business ethics, civil and commercial law, maritime international law, finance, commercial practices, visits to commercial and industrial plants, drawing and vocal music, and training of secretaries and commercial executives.

E. Two-year course for the higher commercial schools: Native language, rhetoric, logic and classical nomenclature, comparative literature, contemporary geography, applied mathematics, merchandising and commerce, public and business accounting, commercial correspondence, commercial economics, commercial and civil law, commercial practices, finance and budgets. Electives in this course: Administrative, constitutional and consular law, the history of diplomacy, commercial treaties, political economy and statistics, and the elements of biology and sociology.

F. Course of study for the universities. The studies are grouped under the different faculties. Economic sciences: Principles of political economy, history of commercial establishments, public finance, statistics, economic history and geography. Juridical sciences: Constitutional, administrative, civil, commercial and international law. Technical sciences: Mathematics applied to finance, accounting, merchandising and training in a model bank. Pedagogical sciences: Applied psychology, theory and practice of commercial education, and methodology.

G. Three-year course for apprentice night schools: Foreign commercial languages, importing and exporting, transportation, merchandising, markets, tariffs, weights and measures, money and exchange, commercial documents and laws, bookkeeping and business correspondence, political and commercial economy, statistics, typewriting and stenography.

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